

SUPPLEMENTAL SITE ASSESSMENT REPORT

WHITE PARK

PARCEL A - SOUTHSIDE TRAIL

MORGANTOWN, MONONGALIA COUNTY, WEST VIRGINIA

VRP# 22015

April 3, 2023
Revision: April 3, 2023

Prepared for:

CITY OF MORGANTOWN, WEST VIRGINIA
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Prepared by:

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April 3, 2023

Mr. W. Matthew Gadd, Project Manager
WV Department of Environmental Protection
Office of Environmental Remediation
131A Peninsula Street
Wheeling, WV 26003

Subject: Supplemental Site Assessment Report – Revision
White Park, Parcel A – Southside Trail
VRP #22015
City of Morgantown, Monongalia County, West Virginia

Dear Mr. Gadd:

On behalf of The City of Morgantown, West Virginia, enclosed is the revised Supplemental Site Assessment Report (SSAR) for Parcel A – Southside Trail, of the White Park Property, located in the City of Morgantown, Monongalia County, West Virginia. This revision is in response to comments received from the West Virginia Department of Environmental Protection (WVDEP) via Comment Letter, dated March 24, 2023, and addressed as follows:

1. General: WVDEP requires that the Checklist to Determine the Applicable Standards (VRP Guidance Manual Attachment 2) be completed during the site assessment phase and included in the Site Assessment Report in order to make sure there are sufficient samples to answer the questions in Part 1 Ecological Standards. Appendix C of this report (the CSM) appropriately shows the potential risk exposures via surface water and sediment pathways, yet no sediment and or surface water samples have been included in the site-related documents. The Checklist is not in this Report and WVDEP did not see it in the application. Please complete the Checklist and attach it to this Report with the appropriate additional text to explain the determinations. WVDEP would be happy to meet with the LRS to discuss the Checklist and potential ecological risks.

Response to Comment 1: A new section, Section 4.4, Checklist to Determine Applicable Ecological Remediation Standards, has been added to the report, as well as a new appendix, Appendix D, Ecological Checklist. The checklist has been completed and determination made that the pathway is incomplete. Therefore, the CSM has been revised to remove the potentially complete ecological pathway.

2. 3.6 Data Validation, Page 3-3: The Report states, “Based on the quality assurance review, the analytical data associated with the Site were determined to meet the data quality objectives of the project. “However, data validation is only one aspect of the data quality objective. Please include a broader discussion of whether or not the DQOs and DQIs for this site assessment have been met, especially since there was a contaminated method blank during the SPLP analysis.

Response to Comment 2: Section 3.6, now titled, Data of Known Quality and Usability, has been updated to explain in more detail the DQOs and DQIs and the conclusion of the data review.

3. Table 1: The Residential and Industrial De Minimis RBC values for Zinc are 23,000 and 350,000 mg/kg, respectively, however all the results are below these standards. Please update the Report accordingly.

Response to Comment 3: Zinc's RBCs have been updated in Table 1.

4. Table 5: the VISL Residential RBC for Naphthalene is 10.9 µg/L and for Benzo(a)anthracene is 176 µg/L. It appears that the units were converted incorrectly for these chemicals, but these values do not change the interpretation of having no VI issues. Please update the report accordingly.

Response to Comment 4: The VISL Residential RBCs for naphthalene and benzo(a)anthracene have been updated in Table 5.

5. Table 5: WVDEP agrees that the method blank was contaminated with Naphthalene at a concentration of 0.142 µg/L, which would result in a value of 0.198 µg/L once the value in the method blank is subtracted out. This adjusted value is greater than the Naphthalene Groundwater De Minimis Standard (0.12 µg/L) and needs to be explained. Please either provide an appropriate rationale that explains why this potential exceedance of Naphthalene should be ignored (note that Appendix B indicates that Naphthalene in the SPLP analysis should be U-flagged, but the lab and Table 5 had it as B-flagged) or calculate a site-specific Dilution Factor (DF) using the NJDEP SPLPDF Calculator spreadsheet and adjust the Groundwater De Minimis Standard Accordingly (preferred).

Response to Comment 5: Data validation guidelines and US EPA methods do not allow the subtraction of blank results. "US EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review," (US EPA, August 2017) dictates that one is to use professional judgment to qualify sample results that are \geq reporting limits and \geq blank results. Sample SPLP-1 had a naphthalene result of 0.34 µg/L. Sample SPLP-1 Dup (field duplicate of SPLP-1) had a naphthalene result of "non-detect" at 0.034 µg/L. It was the opinion of the Environmental Standards' chemist that the SPLP naphthalene sample data reported was due to contamination in the analytical system and not representative of the sample. The data was therefore qualified as "non-detect." The data was "B" qualified in the tables to communicate the reason why this potential exceedance of naphthalene should be ignored.

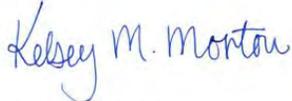
In addition, and as recommended, a site-specific dilution factor (DF) was calculated using the NJDEP SPLP DF Calculator spreadsheet, found here: https://www.nj.gov/dep/srp/guidance/rs/splp_spreadsheet.xls. The length of the area of concern parallel to ground water flow was conservatively estimated to be 100 feet and is more conservative than the default recommended by US EPA of 148 feet (GUIDANCE DOCUMENT, DEVELOPMENT OF A DILUTION-ATTENUATION FACTOR FOR THE IMPACT TO GROUND WATER PATHWAY, NJDEP, Version 2.0, November 2013). An image of the calculator and the inputs and outputs is provided below.

NJDEP 2022 Migration to Ground Water Dilution-Attenuation Factor Calculator																																																							
Site Name: White Park		Date: 3/27/2023																																																					
Additional Description: SPLP		Evaluated by: Kmorton																																																					
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A Dilution-Attenuation Factor (DAF) of 20 was calculated. The naphthalene groundwater de minimis standard is 0.12 µg/L; once adjusted for the DAF (x20), the adjusted naphthalene groundwater de minimis standard would be 2.4 µg/L, well below the SPLP naphthalene data reported.

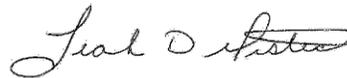
If you have any questions or require additional information, please feel free to contact us.

Sincerely,



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Staff Geoscientist II

Sincerely,



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Senior Geoscientist

Sincerely,



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Principal Chemist/Director of Operations

KMM/LDM/LMW:tn
Encl.

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- Appendix D Ecological Checklist



ACRONYM GLOSSARY

AST	Aboveground Storage Tank
bgs	below ground surface
BOPARC	Morgantown Board of Park and Recreation Commissioners
°C	Degrees Celsius
CERCLA	Compensation, and Liability Act
CERCLIS	Compensation, and Liability Information System
COC	Contaminant of Concern
COPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
EPC	Exposure point concentrations
ERC	Environmental Resources & Consulting, LLC
ESA	Environmental Site Assessment
HRS	Hazard Ranking System
LRS	Licensed Remediation Specialist
mg/kg	milligram per kilogram
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MUB	Morgantown Utility Board
OER	Office of Environmental Remediation
PA	Preliminary Assessment
PAH	Polycyclic Aromatic Hydrocarbons
PID	Photoionization Detector
QAPrP	Quality Assurance Program Plan
PQS	Pennzoil-Quaker State Company
RBC	Risk-Based Concentration
RCRA	Resource Conservation and Recovery Act
RL	Laboratory Reporting Limit
RSL	Regional Soil Screening Levels
SAWP	Site Assessment Work Plan
SCS	Soil Conservation Service
SI	Site Inspection
SIR	Site inspection Report
SPLP	Synthetic Precipitation Leaching Procedure
SSAR	Supplemental Site Assessment Report
SVOC	Semivolatile Organic Compound
ug/kg	Microgram per kilogram
US EPA	United States Environmental Protection Agency
USDA	U.S. Department of Agriculture
USGS	United States Geological Survey
VISL	Vapor Intrusion Screening Level
VOC	Volatile Organic Compound
VRA	Voluntary Remediation Agreement
VRP	Voluntary Remediation Program
VRRRA	West Virginia Voluntary Remediation and Redevelopment Act
WMS	Waste Management Section
WPS	White Park Southside
WVDEP	West Virginia Department of Environmental Protection
WVDNR	West Virginia Department of Natural Resources,
WVLSC	West Virginia Land Stewardship Corporation

1.0 INTRODUCTION

White Park is a 170-acre municipal park including playing fields, an ice arena, outdoor classrooms for an adjacent middle school, and more than 17 miles of hiking and biking trails. White Park lies at the northern end of an approximately 700-acre area that was operated as a crude oil tank farm by Standard Oil, Eureka Pipeline Company, and South Penn Oil Company, from the late 1800s to the 1950s. Environmental investigations and remediations have occurred at White Park since the late 1980s, including sampling of groundwater, soil vapor, surface soils, and subsurface soils, as well as surface water and sediment in the Cobun Creek reservoir. The City of Morgantown, West Virginia (City) is the owner of White Park.

The Parcel A – Southside Trail Parcel (Site or Property) is an approximate 22.5-acre area that lies east and south of the Cobun Creek reservoir, within the boundaries of White Park. Based on available historical documents, six large aboveground storage tanks (ASTs) were historically located within the boundary of Parcel A.

A Limited Phase II Environmental Site Assessment (ESA) was completed in 2022 at the Southside Trail Parcel by the City in advance of planned recreational trail development. The Phase II ESA was limited in that it focused on surface soil along the planned trail pathway and subsurface soils being identified by the City as potential borrow material for trail construction. The groundwater was not investigated. The Phase II ESA confirmed contaminants of concern (COCs) in soil and a decision was made by the City to enter White Park into the West Virginia Voluntary Remediation Program (VRP). The White Park property as presented in the VRP includes Parcel A – Southside Trail, and Parcel B – Upland Area. Cobun Creek and the reservoir are not included in the VRP boundaries. The City has contracted with Environmental Standards, Inc. (Environmental Standards) to provide Licensed Remediation Specialist (LRS) services as they relate to the VRP.

A pre-VRP Application site visit was conducted on April 12, 2022, with the City, the West Virginia Department of Environmental Protection (WVDEP), and Environmental Standards. The lack of groundwater data was discussed, and it was agreed that soil sampling followed by laboratory analysis via synthetic precipitation leaching procedure (SPLP), as an alternative to groundwater monitoring samples, was appropriate.

The VRP Application was approved by the WVDEP, Office of Environmental Remediation (OER) on August 3, 2022. The Application included data from all available historical environmental investigations, including the above-mentioned 2022 Phase II ESA. The Site was assigned VRP identification number 22015. The Voluntary Remediation Agreement (VRA) was subsequently approved on October 24, 2022. Ms. Lydia Work, Environmental Standards Principal Chemist, is the LRS for the Site. She holds LRS certification number 148.

Environmental Standards has prepared this Parcel A – Southside Trail Supplemental Site Assessment Report (SSAR) to summarize the recently completed supplemental site assessment findings. It is recommended the analytical data derived from this investigation will be used to perform a *de minimis* Human Health and Ecological Risk Assessment (HHERA) for Parcel A – Southside Trail that will be submitted to the WVDEP under a separate cover. The HHERA, once approved by the WVDEP, will guide the development of a Remedial Action Work Plan (RAWP) for the Southside Trail parcel.

2.0 SITE INFORMATION

2.1 Site Location

The Parcel A – Southside Trail Site is located within the City of Morgantown, Monongalia County, West Virginia. The location of the Property is depicted in Figure 1, Site Topographic Map and in Figure 2, Site Location. The size of the Site is approximately 22.5 acres. The Cobun Creek Reservoir is located north of the Site. To the south of the Site is a commercial area along Greenbag Road; east and west are both bordered by VRP Parcel B – Upland Area, which is a mix of undeveloped woodlands and recreational areas. The Upland Area of White Park hosts athletic fields, an ice arena, outdoor classrooms for the adjacent middle school, and hiking and biking trails.

2.2 Site Description

The portion of the Site that encompasses the White Park Southside Trail spans across three contiguous parcels owned by the City (31-09-048A-0006-0000, 31-09-048A-0007-0000, and 31-09-0048-0041-0000).

The Southside Trail is a proposed 6,000-foot corridor recreational walking and/or biking trail. The proposed trail corridor is located within White Park and runs along the southern and eastern sides of Cobun Creek Reservoir, which serves as a supplemental potable water supply for the City. The Site is currently vacant and wooded, with a variable grade. A tabulated summary is provided below:

Municipality	<i>Morgantown</i>
County	Monongalia
Parcel IDs	31-09-048A-0006-0000, 31-09-048A-0007-0000, and 31-09-0048-0041-0000
Size	22.47 acres
Property Owner(s)	City of Morgantown
# of Buildings	None
Additional Improvements and Site Features	Site is intersected by sewer and water lines; access to public services (water, sewage, electric)

2.3 Site Ownership

The Site is owned by the City of Morgantown.

2.4 Site Geology and Hydrogeology

The area of the Site where the Southside trail is proposed lies at an elevation of approximately 950 to 1000 feet above mean sea level. The topography of the project area has a hilly and variable gradient, generally sloping towards the Cobun Creek Reservoir. Regionally, the slope trends west towards the Monongahela River.

The Appalachian Plateaus physiographic province underlies all of Monongalia County, including the White Park Property. Bedrock in the region is characteristically flat to gently folded shale, siltstone, and sandstone. The uppermost geology is the Conemaugh Group of the Pennsylvania Series, which consists of non-marine cyclic sequences of red and grey

shale, siltstone, and sandstone; thin seams of limestone and coal are also present. Bedrock is observed to be very shallow at the Site, in some locations less than two feet from the surface.

According to the U.S. Department of Agriculture's (USDA's) Soil Conservation Service (SCS) (<https://websoilsurvey.sc.egov.usda.gov/App/WebSoilSurvey.aspx>), primary soils in the vicinity of Property consist of Clarksburg silt loams, with minor contributions of Culleoka-Westmorland silt loams, Lobdell silt loams, and Urban Land. Clarksburg silt loams are moderately well drained and are derived from fine-loamy colluvium from shale, sandstone, and limestone parent material. Urban land is largely introduced material. In the case of the Site, introduced material was observed in relation to the location of former ASTs and from utility improvements (the water and sewer line that transects the Site).

Surface water is generally absorbed by the vegetative cover of the project area and park, with any runoff directed towards Cobun Creek and its associated Cobun Creek Reservoir, which discharges into the Monongahela River, approximately 0.25-miles downstream of the Site. Under natural, unconfined aquifer conditions, shallow groundwater beneath the project area would reasonably be expected to flow towards the reservoir and Monongahela River. Based on a review of the online National Wetlands Inventory (<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>), there are no wetlands located within the Site boundaries; Cobun Creek Reservoir is designated as a 12.17-acre freshwater pond and Cobun Creek incoming from the east is classified as a riverine habitat.

2.5 Current Use of the Site

The proposed Southside trail corridor is currently wooded and used by recreational visitors to White Park.

2.6 Historical Use of the Site

The 170-acre White Park Property, including the Southside Trail Parcel portion (the Site), was part of the 700-acre Morgantown Tank Farm. The tank farm was developed in the late 19th century and operated as such throughout the first half of the 20th century. Although largely abandoned by the late 1940s, a handful of ASTs existed and may have been used for other purposes until the early 1970s. There are no ASTs currently on White Park. However, the locations of the historical ASTs are discernable by raised earthen berms located throughout White Park. Tank numbers T-37, T-38, T-39, T-40, T-43 and T-44 were located within the boundaries of the Site (Parcel A). Please refer to Figure 3, Areas of Concern, for the location of these tanks and their earthen berm secondary containment rings.

In 1958, the Morgantown Sanitary Board, now known as Morgantown Utility Board (MUB), constructed a dam to form the Cobun Creek Reservoir. In 1966, the Morgantown Sanitary Board made a right of way agreement with Eureka Pipeline Company and installed/upgraded a 10" concrete force main sewer line running through the Southside Trail Parcel (see Figure 8, Morgantown Sanitary Board ROW). In 1973, the City of Morgantown acquired the Property and began developing a diverse park system.

2.7 Previous Environmental Investigations

In addition to the 2022 investigation conducted by Environmental Standards on behalf of ERC and the City, the WVDEP and the City provided copies of reports documenting historical investigations and remediation between the late 1980s and 2019. These investigations, and their findings, are summarized below.

2.7.1 1980s and 1990s

The Site was listed as a potentially hazardous waste site in the Compensation, and Liability Information System (CERCLIS) in August 1988 following an inspection and preliminary sampling investigation conducted by the West Virginia Department of Natural Resources, Waste Management Section (WVDNR WMS). The inspection was initiated by a report from a private citizen concerning tar-like deposits observed in an area remaining from a former crude oil tank farm. During the inspection, a tar-like substance with a petroleum odor was observed in a former berm area near the South Middle School, and additional tar-like deposits were observed along a small tributary stream that flowed into Cobun Creek.

A preliminary assessment (PA) was performed in March 1989 by WVDNR WMS, and a Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) site investigation was recommended. In April 1989, WVDNR WMS personnel inspected the Site. No testing data was available for review in the WVDNR WMS project file.

In 1998, reclamation work was completed by the Eureka Pipeline Company (*a.k.a.*, PQS or Shell) at three berm areas near the public athletic fields with exposed hydrocarbon residues. These were identified as tank locations T-44, T-68, and T-74. A portion of T-44 is within the boundary of Parcel A (see Figure 3). Subsequently, the WVDEP OER determined further assessment was warranted to determine potential risk associated with the Site and if the Site should undergo further investigation under CERCLA.

2.7.2 2010 Site Inspection and Soil Removal

A preliminary Hazard Ranking System (HRS) Site Score was calculated for the White Park CERCLIS site. Based on the preliminary HRS Site Score and knowledge the Cobun Creek Reservoir was potentially impacted by contaminants from the former tank farm, the US EPA and WVDEP, OER determined that a site inspection (SI) was warranted to assess potential risk associated with the Site and determine if the Site should undergo further action under CERCLA. An SI was performed under a pre-remedial cooperative agreement between the WVDEP and the US EPA Region 3 in 2010. Field sampling activities included 13 surface soil, seven subsurface soil, two reservoir surface water, and two reservoir sediment samples. The samples were analyzed for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs) of which polycyclic aromatic hydrocarbons (PAHs) are a subset, Resource Conservation and Recovery Act (RCRA) Metals, and polychlorinated biphenyls (PCBs). The investigation reported the following:

- Elevated concentrations of barium in the reservoir surface water
- Elevated concentrations of SVOCs in the reservoir sediments
- Arsenic; naphthalene; benzo(a)anthracene; benzo(b)fluoranthene; benzo(a)pyrene; indeno(1,2,3-cd)pyrene; methylene chloride; benzene; 1,2-dichloroethane; ethylbenzene; and 1,1,2,2-tetrachloroethane in soils at concentrations greater than their respective residential soil risk-based concentrations (RBCs)

The greatest concentration of noted contaminants were collected around observed free-product near former tank number 40 (T-40, refer to Figure 3). The Cobun Creek Reservoir was approximately 100 feet downgradient of the T-40 contamination. A portion of the footprint (tank foundation and secondary containment berm) of former tank number 40 is within the boundary of the Site.

The following conclusions were stated in the SI Report (Triad Engineering, Inc. [Triad], 2010):

- Contamination to site soils from historical land use (tank farm) exists.
- Recreational visitors are being exposed to surface soil concentrations above residential soil RBCs.
- The risk of a release to Cobun Creek Reservoir via overland flow exists.

The following were recommended for consideration:

- Removal of the area of observed free-product in the bermed area of T-40.
- If not already in place, groundwater and future land use be restricted through a land use covenant or deed restriction.

PQS/Shell subsequently removed approximately 1,300 cubic yards of soil from the bermed area of former AST T-40 and transported the impacted soils off site. Approximately 1,900 cubic yards of off-site backfill was imported from a virgin source approximately 1 mile south the Site. The fill source was reported to be a hillside/hill cut at the southern terminus of Distributor Drive (MUB office located on intersection of Greenbag Road and Distributor Drive). Prior to importing the backfill to the Site, two characterization samples were collected and analyzed to determine that soils met WVDEP residential soil RBCs.

2.7.3 2018 Site Inspection Reassessment

In 2018, a site inspection reassessment (SIR) was performed under a pre-remedial cooperative agreement between the WVDEP and the US EPA Region 3. The SIR was performed to qualitatively assess potential risk associated with the White Park CERCLIS Site and to determine whether the Site may be eligible for further investigation under CERCLA. Field sampling activities included collection of 11 surface soil, 5 subsurface soil, 5 surface water, 8 sediment samples, and 4 soil vapor samples. The media was analyzed for VOCs, SVOCs, PAHs, metals, and PCBs.

Elevated concentrations of metals were detected in surface water and sediment. Metals and PAH were detected in soil at concentrations greater than their respective RBCs for residential soil. The greatest concentrations of the above-noted contaminants were collected in the surface impoundment areas of former tank numbers T-30, T-50, T-60, T-61, T-62, and T-74 (Figure 3, all outside the bounds of the Parcel A-Southside Trail Site). Based on the assessment activities, additional remedial activities were deemed warranted to protect human health and the environment from the previously identified on-site contaminants. Therefore, it was recommended to enter the Site into the West Virginia VRP to evaluate human health and ecological receptors and remedial options for the Site.

2.7.4 2019 MUB Phase II ESA and Soil Removal

A Limited Phase II ESA of subsurface soils in June 2019 was completed by MUB to assess contamination in the location of a proposed waterline. This waterline transects the Site running northeast to southwest, south of the reservoir. The ESA revealed evidence of contamination within the waterline right-of-way. A total of 43 subsurface soil samples were collected and analyzed for metals, VOCs, and SVOCs/PAHs. It was reported that low-level PAHs and metals were identified in the subsurface soil of the proposed waterline.

MUB coordinated with the WVDEP and during construction of the waterline the area was monitored by an environmental professional employed by Triad. The findings revealed evidence of contamination in subsurface soils. A strong petroleum odor and soil staining was documented near the former T-40 location, south of the reservoir dam, which was presumably the same location remediated by PQS/Shell in 2010. Triad documented that as excavation progressed northeast along the proposed waterline, evidence of petroleum contamination became less evident. Soils with identified contamination, as determined by field screening with a photoionization detector (PID), were over excavated and stored on site. The stockpiles were sampled and characterized to be non-hazardous. Based on interviews with City personnel, the excavated soils were disposed offsite at a local disposal facility. It is not recorded in the documents provided what material was used to backfill the waterline trench during construction.

2.7.5 2022 Phase II ESA (City)

A Limited Phase II ESA investigation was conducted at the Site by Environmental Standards in 2022. The scope of the Limited Phase II ESA included the collection of surface soil samples, defined as 0-2 feet below ground surface (bgs), along the proposed trail corridor and subsurface soil samples (>2 feet bgs) in areas of potential borrow material. A total of 65 surface soil samples and four subsurface soil samples were collected. Please refer to Figure 4, 2022 Phase II ESA Sample Location map for the location of the samples in relation to the former ASTs and the MUB underground utilities.

The analytical testing included RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc), PAHs, and naphthalene by VOC analysis. The data were compared to WVDEP and US EPA provided regional soil screening levels (RSLs) for a recreator. Exposure point concentrations (EPCs) were calculated using WVDEP and US EPA approved statistical methods. Based on the Limited Phase II ESA investigations and results, Environmental Standards concluded:

- Surface soil location SS-29 is an area of concern for arsenic. The source of the arsenic is unknown. The location is immediately outside the tank T-37 berm and within the identified municipal waterline.
- Surface soil locations SS-23, SS-25, SS-47, SS-48, SS-50, and SS-60 are areas of concern for PAH. Benzo(a)pyrene, a PAH, is considered a marker COC since it is a common petroleum contaminant and was detected at each location of concern. The PAH exceedance locations are directly attributable to former AST locations.
- Arsenic is a COC in subsurface soil, and only in location 03. Location 03 is within a former AST location, T-39.

Please refer to Figure 5, Arsenic Surface Soil Exceedance and Figure 6, Benzo(a)pyrene Surface Soil Exceedance, for the location of the surface soil areas of concern. The hill shade background of the figures was provided by the WVDEP.

The 2022 Phase II ESA data was provided in the VRP Application and accepted for use in future risk assessments by the WVDEP. A summary of the Phase II ESA data is provided in Table 1, 2022 Phase II ESA Soil Data.



3.0 SITE ASSESSMENT INVESTIGATION

3.1 Objectives

To address the identified groundwater data gap, a Site Assessment Work Plan (SAWP) was developed by Environmental Standards and approved by the WVDEP. The objective of the SAWP was to collect additional data to address the groundwater data gap at the Site. Soil samples were to be collected and leached using SPLP methodology by a West Virginia-certified laboratory. The soil leachate (an aqueous matrix) would then be analyzed, and the results directly compared to groundwater *de minimis* RBCs as a conservative approximation of migration to groundwater potential. The SPLP (*a.k.a.*, groundwater impact determinant) locations were selected based on known former AST locations.

Additionally, after the SAWP was approved, four surface soil samples were added to the scope to determine soil conditions in a newly proposed Skills Area (within the AST footprint of T-39) and a newly proposed cross-over trail, near the confluence of former AST locations T-37, T-38 and T-43. The WVDEP approved these SAWP modifications.

3.2 Scope-of-Work

Please refer to Figure 7, 2022 SSAR Sample Locations, for the location of the samples.

The site assessment Scope-of-Work is summarized on Table 2, Sample Summary. The lists of Contaminants of Potential Concern (COPCs) are specified on Table 3, Analytical Summary. They are:

- SPLP RCRA metals (arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, and zinc) and PAH of soil leachate (sample identifications SPLP-1 through SPLP-5).
- RCRA metals and PAHs in surface soil (sample identifications SS-01 through SS-04).

All samples were submitted to and analyzed by Eurofins Test America Lancaster Laboratories Environmental, LLC (ELLE) in Lancaster, Pennsylvania. ELLE is a WVDEP-certified laboratory (Certification Number 9906 C).

3.3 SPLP Soil Sampling

Environmental Standards and subcontractor, AllProbe Environmental, Inc. (AllProbe), deployed a Geoprobe direct-push drilling rig, mounted on a Takeuchi skid steer, to advance soil borings and collect the associated SPLP soil samples (SPLP-1, SPLP-2, and SPLP-5) on December 14, 2022. The remaining two SPLP samples (SPLP-3 and SPLP-4) were inaccessible to the drill rig due to the terrain and were collected using a hand auger to refusal.

The soils were classified and screened with a PID meter following method iii in Standard Operating Procedure (SOP) OER-121, *Soil Sampling Using Direct-Push Drilling*. If no PID readings were observed, other olfactory or visual indications of potential contamination were used to bias the sampling interval, or the sample was collected at the greatest depth.

The approved scope of work dictated soil samples will be collected from the soil interval based on the following, in order of preference: (1) immediately above the elevation from which groundwater is encountered, (2) within the interval an elevated PID reading occurs, or (3) immediately above the elevation from which refusal is encountered or the boring was terminated.

Samples SPLP-1, SPLP-2, and SPLP-5 were collected directly from the plastic liner. At each soil boring location, a new 5-foot plastic liner was installed in the Geoprobe, which was advanced and retrieved to a total of 15 feet bgs. Soil from SPLP-1 consisted of brown clays with rock fragments with no PID reading greater than 0.0 ppm. Refusal was encountered at 13.5 feet. Sample SPLP-1 was collected from the 10-13.5-foot interval. Soil from SPLP-2 consisted of brown clay with rock fragments. PID readings were recorded at 45.3 ppm in the first 5 feet. There were no PID readings between 5 feet and 15 feet. Sample SPLP-2 was collected from the 10-15 foot interval. Soil from SPLP-5 showed signs of visible contamination of grey and odorous soils after 5 feet. Refusal was encountered at 9.5 feet. Sample SPLP-5 was collected from the 5-9.5-foot interval with a PID reading of 95.6ppm.

Samples SPLP-3 and SPLP-4 were collected directly from the hand auger sampling device. The hand auger sampling device was decontaminated before each sample collection. SPLP-3 was unable to be advanced greater than one-foot bgs. SPLP-3 is located within the foundation of historical AST number T-43 and is likely the result of extremely compacted material. The greatest PID reading from SPLP-3 was 6.6 ppm. Sample SPLP-3 was collected from the 0.5-1-foot interval. SPLP-4 was advanced to 4 feet before refusal was encountered. Sample SPLP-4 was collected from the 3–4-foot interval.

Groundwater was not encountered in any of the soil borings.

Sample SPLP-1-DUP (10-13.5) is a field duplicate quality control (QC) sample of location SPLP-1.

3.4 Surface Soil Sampling

On December 14, 2022, Environmental Standards collected four surface soil samples (ranging between 0 – 2 ft bgs) via clean unused disposal scoops. Three samples were collected in the designated Skills Area of the Southside Trail Parcel, and one was collected at the proposed cross-over trail, near the confluence of former AST locations T-37, T-38, and T-43. An Environmental Standards Professional collected one discrete soil sample at each location. Soil samples were immediately transferred into certified-clean, laboratory-supplied bottle ware using either the clean disposal scoop or a clean pair of nitrile gloves.

Surface soil sample SS-03-121422-DUP (0-2) is a field duplicate QC sample of location SS-03.

3.5 Analytical Laboratory Services

After collection, the containers were properly sealed and immediately placed upright in an iced cooler. Bottle ware was labeled, packed into an iced shipping container, and delivered with appropriate Chain-of-Custody documentation to ELLE, a WVDEP-certified laboratory.

Samples were analyzed in accordance with the method requirements specified in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, SW-846, 3rd Edition* (SW-846). Specifically, PAHs were analyzed by US EPA SW-846 Method 8270E selective

ion monitoring (SIM) and metals were analyzed by US EPA SW-846 Method 6020B, and mercury method EPA 7471B. A copy of the analytical laboratory certificate of analysis and the sample collection Chain-of-Custody form is provided in Appendix A, Laboratory Analytical Results.

3.6 Data of Known Quality and Usability

As stipulated in Section 8.2.d of the West Virginia Voluntary Remediation and Redevelopment Act (VRRRA), a minimum of 10 percent (%) of site assessment data is to be Stage 4 validated in order to determine data quality and usability in risk assessment. 100% of the data in the supplemental site assessment was validated at Stage 4 to meet the programmatic requirement of 10% of soil data for each medium that will be used in the risk assessment.

During the site assessment activities, QC samples including field duplicate samples were collected. These QC data, as well as laboratory data such as sample preparation logs, calibrations, chromatography, method blanks, laboratory control samples, matrix spike samples, internal standards, and surrogates were evaluated by Environmental Standards.

Data quality objectives (DQOs) were outlined in the approved SAWP. DQOs were assessed by evaluating the data quality indicators (DQIs) of precision, accuracy, representativeness, completeness, comparability, and sensitivity. The DQOs were:

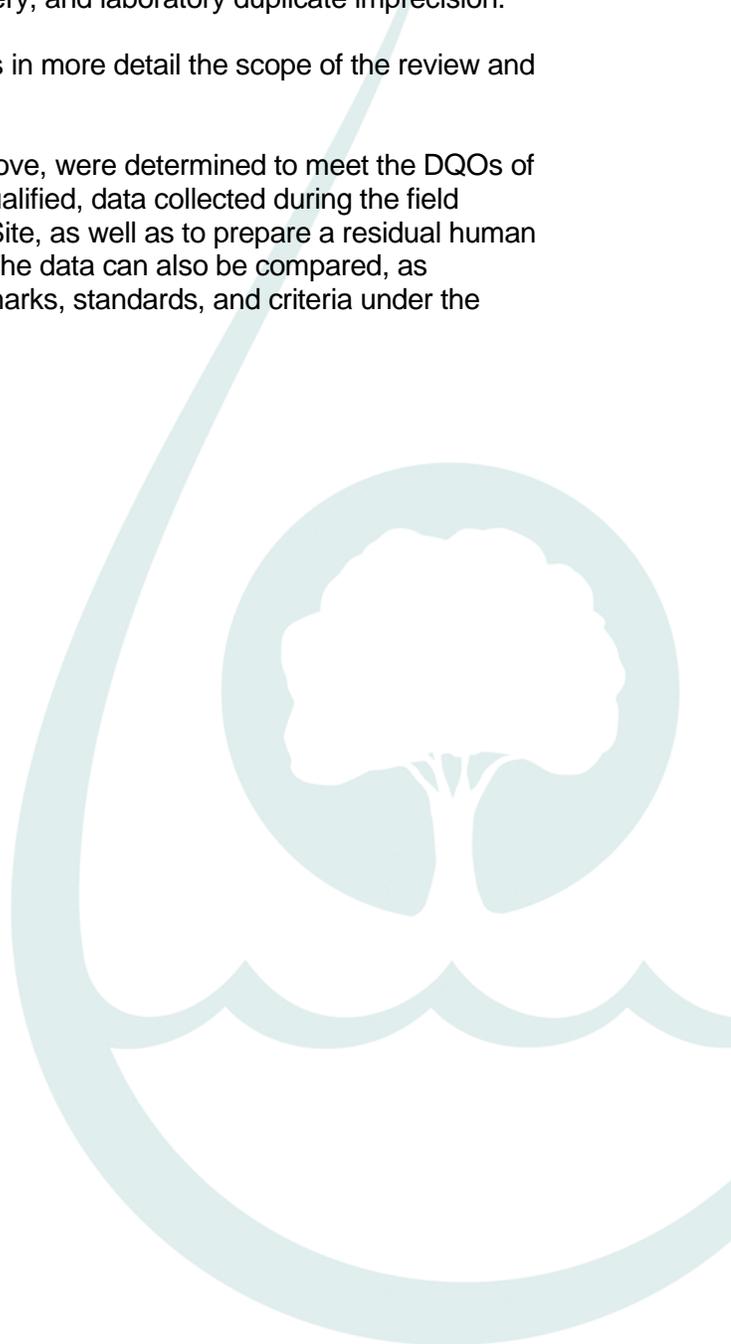
- Samples will be collected, using appropriate sampling procedures, from Site media representative of the media that potential human health and ecological receptors will be exposed to.
- The laboratory will be certified by the WVDEP Laboratory Quality Assurance Program for the analytical methods reported.
- The laboratory will meet the minimum QA/QC requirements of the analytical methods reported.
- Blanks will be free of contamination.
- The control limit for field duplicate sample analyses, measured as precision, is 30% for aqueous samples and 50% for soil and sediment samples.
- The control limits for matrix spike/matrix spike duplicate (MS/MSD) sample analyses, measured as accuracy and precision, was determined by the laboratory's internal QA plan; however, any recovery below 10%, unless caused by dilution, will result in the data being rejected.
- The control limits for surrogate recoveries, measured as accuracy, was determined by the laboratory's internal QA plan; however, any recovery below 10%, unless caused by dilution, will result in the data being rejected.
- The control limits for laboratory control samples (LCS), measured as accuracy, was determined by the laboratory's internal QA plan; however, any recovery below 10% would result in the data being rejected.
- Completeness goal of 90%. That is, no more than 10% of the analytical data can be rejected and no more than 10% of the samples planned can be eliminated.
- Comparability of field measurements can be measured via split samples or field duplicate samples. Comparability of analytical measurements can be measured via laboratory duplicates.
- Sensitivity goal is to report sample concentrations at, or below, the applicable *de minimis* RBCs, unless there is established matrix interference or limitations of the analytical method (*i.e.*, technically impactable to achieve).

Data outside established DQI control limits or DQOs will not necessarily be rejected or determined to be unusable, but will have their usability assessed using a multiple lines of evidence approach and will be qualified following standard data validation practices and using professional judgment by the validator.

Based upon review of the laboratory data and the corresponding DQIs, several organic results were qualified as “not-detected” due to blank contamination. These data were “B” qualified in the tables. Several organic results were qualified as estimated due to low LCS recoveries, low MS/MSD recoveries, LCS and LCS duplicate imprecision, and field duplicate imprecision. Several inorganic results were qualified estimated due to high MS/MSD recoveries, low MS/MSD recoveries, low post digestion spike recovery, and laboratory duplicate imprecision.

A copy of the Data Validation Report, which explains in more detail the scope of the review and the findings, is provided as Appendix B.

The analytical data, except for the findings noted above, were determined to meet the DQOs of the project and were determined to be usable. As qualified, data collected during the field sampling activities can be used to characterize the Site, as well as to prepare a residual human health and ecological risk assessment for the Site. The data can also be compared, as appropriate, to the environmental regulatory benchmarks, standards, and criteria under the WVDEP VRP.



4.0 NATURE AND EXTENT OF CONTAMINATION

The WVDEP and US EPA provide RSLs that are calculated based upon estimated human exposure to soils. Environmental Standards compared the site assessment laboratory analytical data to calculated recreational RSLs for a trail user to characterize the nature and extent of contamination in the context of the proposed recreational use. Although portions of the Southside Trail Parcel may be used as a park-type facility, such as the newly identified proposed Skills Area, trail use RSLs are more stringent than park user RSLs; therefore, trail user was utilized comprehensively for all of the Southside Trail Parcel as a more protective estimate for exposure risk.

The following exposure scenarios were used in the generation of the site-specific trail user recreator RSLs (utilizing the US EPA regional screening level generator tool, https://epa-prgs.ornl.gov/cgi-bin/chemicals/csl_search) for soil:

- Exposure frequency to a recreator of 114 days a year, estimated based on seasonal use between the months of March and November, averaging 3 days a week.
- Exposure time to a recreator of 2 hours a day, estimated based on non-commuter use of the trail and average length of time using the trail per daily visit.
- Hazard quotient not to exceed 1.0, set by the WVDEP.
- Cumulative cancer risk of 1×10^{-6} , set by WVDEP.

Data provided by Morgantown Board of Park and Recreation Commissioners (BOPARC) was used to determine the applied exposure frequency and times.

Please note the arsenic RSL was replaced with the maximum published background concentration, found in the 2022 VRP Guidance Manual, Table 3-3: Background Concentrations of Elements in WV Soils.

Surface soils were also compared to the WV VRP residential and industrial soil *de minimis* RBC values (Table 60-9, revised December 2021).

Additionally, Environmental Standards compared the SPLP leachate laboratory analytical data to the WV VRP groundwater *de minimis* RBC values (Table 60-9, revised December 2021). The SPLP leachate analytical results of compounds that are prone to volatilization were also compared to screening levels using the US EPA's Vapor Intrusion Screening Level (VISL) Calculator (https://epa-visl.ornl.gov/cgi-bin/visl_search).

Results are summarized in Table 4 and Table 5.

4.1 Surface Soil Contaminants of Concern

Environmental Standards compared the surface soil laboratory analytical data to the calculated recreational RSLs for a trail user. Any surface soil COPC detected above the recreational RSL or the *de minimis* RBCs is a contaminant of concern (COC). The surface soil results are summarized on Table 4.

Additionally, Environmental Standards compared the surface soil laboratory analytical data to the WV VRP residential and industrial soil *de minimis* RBC values (Table 60-9, revised December 2021).

Metals

Laboratory analytical results indicate that the concentration of metals evaluated in surface soils collected at the Site are below the residential soil RBCs and recreational soil RSLs, except for arsenic in the field duplicate sample SS-03-121422 - DUP (0-2), located within the proposed Skills Area, which had a result of 17 milligrams per kilogram (mg/kg) arsenic. The parent sample, SS-03-121422 (0-2), had an arsenic result of 13 mg/kg. The maximum published background concentration for arsenic is 13.1 mg/kg; therefore, any result reported below 13.1 mg/kg arsenic would not be considered a COC. However, the laboratory reported arsenic to only two significant figures; therefore, to be conservative, any arsenic result reported as 13 mg/kg, is a COC. Therefore, sample locations SS-02-121422 (0-2) and SS-03-121422 (0-2), both within the proposed Skills Area and both with a reported arsenic concentration of 13 mg/kg, are considered areas of concern and arsenic is a COC in surface soil in the proposed Skills Area.

PAHs

Laboratory analytical results indicate that PAHs are below the calculated recreational soil RSLs for trail users except for benzo(a)pyrene in sample SS-04-121422 (0-2) which had a result of 400 microgram per kilogram (ug/kg) benzo(a)pyrene. The benzo(a)pyrene RSL is 353 ug/kg. Sample location SS-04-121422 (0-2) is within the proposed cross-over trail, near the confluence of former AST locations T-37, T-38, and T-43.

Additionally, locations SS-03-121422 - DUP (0-2) with a benzo(a)pyrene result of 190 ug/kg and SS-04-121422 (0-2) with a benzo(a)pyrene result of 400, exceeded the residential soil RBC of 110 ug/kg.

Therefore, benzo(a)pyrene cannot be eliminated as a COC in surface soil in the proposed cross-over trail, near the confluence of former AST locations T-37, T-38, and T-43 and within the proposed Skills Area.

4.2 SPLP Groundwater Impact Determinant Contaminants of Concern

SPLP analysis was performed on the leachate generated from five soil samples to estimate the adsorption-desorption potential of contaminants in soil that may impact groundwater at the Site. Environmental Standards compared the SPLP leachate laboratory analytical data to the WV VRP groundwater *de minimis* RBC values (Table 60-9, revised December 2021).

Any SPLP leachate concentration detected above its respective groundwater *de minimis* RBC is a COC. The SPLP results are summarized in Table 5.

Metals

Laboratory analytical results indicate that the concentrations of metals evaluated in all five SPLP leachate samples are below their respective groundwater *de minimis* values. Therefore, metals are not likely to migrate to groundwater and are eliminated as COCs in groundwater.

PAHs

Laboratory analytical results indicate that the concentrations of PAHs evaluated in all five SPLP leachate samples are below their respective groundwater *de minimis* values. Therefore, PAHs are not likely to migrate to groundwater and are eliminated as COCs in groundwater.

4.3 Vapor Intrusion Screening

The SPLP leachate analytical results of compounds that are prone to volatilization (mercury, benzo(a)anthracene, and naphthalene) were compared to screening levels developed using the US EPA's VISL Calculator (https://epa-visl.ornl.gov/cgi-bin/visl_search), in order to determine if vapor intrusion can be a potentially complete pathway at the Site. Input parameters utilized for the comparison were:

- Hazard quotient not to exceed 1.0
- Cumulative cancer risks of 1×10^{-6} (resident) and 1×10^{-5} (commercial)
- Temperature of 13 degrees Celsius

Any SPLP leachate concentration detected above its respective groundwater VISL is a COC. The SPLP results are summarized in Table 5.

The applicable PAH and metal compounds were not detected at concentrations greater than their respective resident or commercial VISLs. Therefore, there are no vapor intrusion COCs for the Site.

4.4 Checklist to Determine Applicable Ecological Remediation Standards

The Checklist to Determine Applicable Remediation Standards was completed and to ensure there are sufficient samples to answer the questions in Part 1, Ecological Standards, of the checklist. In 2018, a Site Inspection Reassessment was completed by the WVDEP (Triad Engineering, Inc., Site Inspection Reassessment, White Park CERCLIS Site, July 2020), that included surface water quality samples. The Site Inspection Reassessment report was referenced in the VRP application for White Park as usable for risk assessment. 100% of the data were validated and met the data quality objectives. These data were used in the determination.

A *de minimis* Ecological Screening Evaluation is an evaluation of the nature and extent of contaminants of the Site that may impact potential ecological receptors of concern. The evaluation should determine if potential exposure pathways are completed. If complete exposure pathways are not present between contaminants and ecological receptors of concern, no significant risk to ecological receptors is assumed.

4.4.1 Pathways of Ecological Exposure

This section presents a screening-level ecological evaluation for the Site. The evaluation is consistent with the WVDEP guidelines for conducting a *de minimis* Ecological Screening Evaluation. The *de minimis* Ecological Screening Evaluation consists of the following steps:

- Determination of potentially complete exposure pathways;
- Identifying readily apparent harm;
- Identifying contamination associated with ecological habitats; and
- Identifying potential ecological habitats and receptors of concern.

These steps are evaluated with the use of the "Checklist to Determine the Applicable Ecological Standard", which is provided in the WVDEP *VRP Guidance Manual*. The completed checklist is included as Appendix D.

The pathways of ecological exposure to be considered are soil, groundwater, and surface water. An exposure pathway is defined as a physical association between an ecological receptor of concern and a Site-related contaminant. Both aquatic and terrestrial receptors were considered. Depth to groundwater is such that there are no potentially complete pathways for ecological receptors to contact groundwater. There are no valued terrestrial, wetland, or aquatic habitats within the Site.

According to Step 1 of the Checklist, there is a surface water body (*i.e.*, lotic or lentic habitat) on or adjacent to the Site. Those surface water bodies are Cobun Creek and the Cobun Creek reservoir adjacent to the Site.

In completing Step 2, the risk was evaluated in terms of “readily apparent harm” or is the “site contributing to exceedances of surface water quality standards”; no such evidence was apparent. In 2018, a Site Inspection Reassessment was completed by the WVDEP (Triad, 2020), that included surface water quality samples. Metals, indicative of known upstream abandoned mine lands impacts, and not petroleum storage, were detected. Furthermore, based on the soil data collected, including soil leachability, site-related contaminants are not likely to be migrating to aquatic habitats. Therefore, it is reasonable to conclude the Site is not contributing to exceedances of surface water quality standards.

In Step 3, site-related contaminants were evaluated in terms of the risk to ecological habitat. As discussed above, there are no site-related contaminants currently or likely to be migrating to aquatic habitat (*e.g.*, lotic, lentic, or wetland habitat). The checklist states that at this conclusion, Steps 4 and 5 are unnecessary.

4.4.2 *De minimis* Ecological Screening Evaluation Conclusions

The ecological screening evaluation consisted of an assessment of the physical and ecological characteristics of the Site and the nature and extent of contamination to determine if there are complete exposure pathways to ecological receptors of concern from the Site.

The screening evaluation indicated that there are potentially valued terrestrial, wetland, and/or aquatic habitats within the Site. However, the screening concluded site-related contaminants are not likely to be migrating to aquatic habitats. Therefore, a complete exposure pathway does not exist for potential ecological receptors of concern. Therefore, the ecological evaluation is complete, and the Site has passed the *de minimis* Ecological Screening Evaluation.

Lastly, it can be concluded that there are sufficient samples to complete the ecological screening evaluation.

5.0 SSAR CONCEPTUAL SITE MODEL (CSM)

A visual representation of the SSAR CSM is presented in Appendix C. The CSM incorporates the 2022 Phase II ESA data (submitted with the VRP Application) and the 2022 supplemental site assessment data, collected under the VRP. The CSM summarizes each potential contaminant source, COC, release mechanism, media, exposure pathway and receptor.

As demonstrated by the CSM, there are potentially complete exposure pathways at the Site. They are:

- (1) future workers, residents and recreators to arsenic and PAHs in the surface soil within defined areas of the Site; and
- (2) future construction workers to arsenic in the subsurface soil associated with AST location T-39.

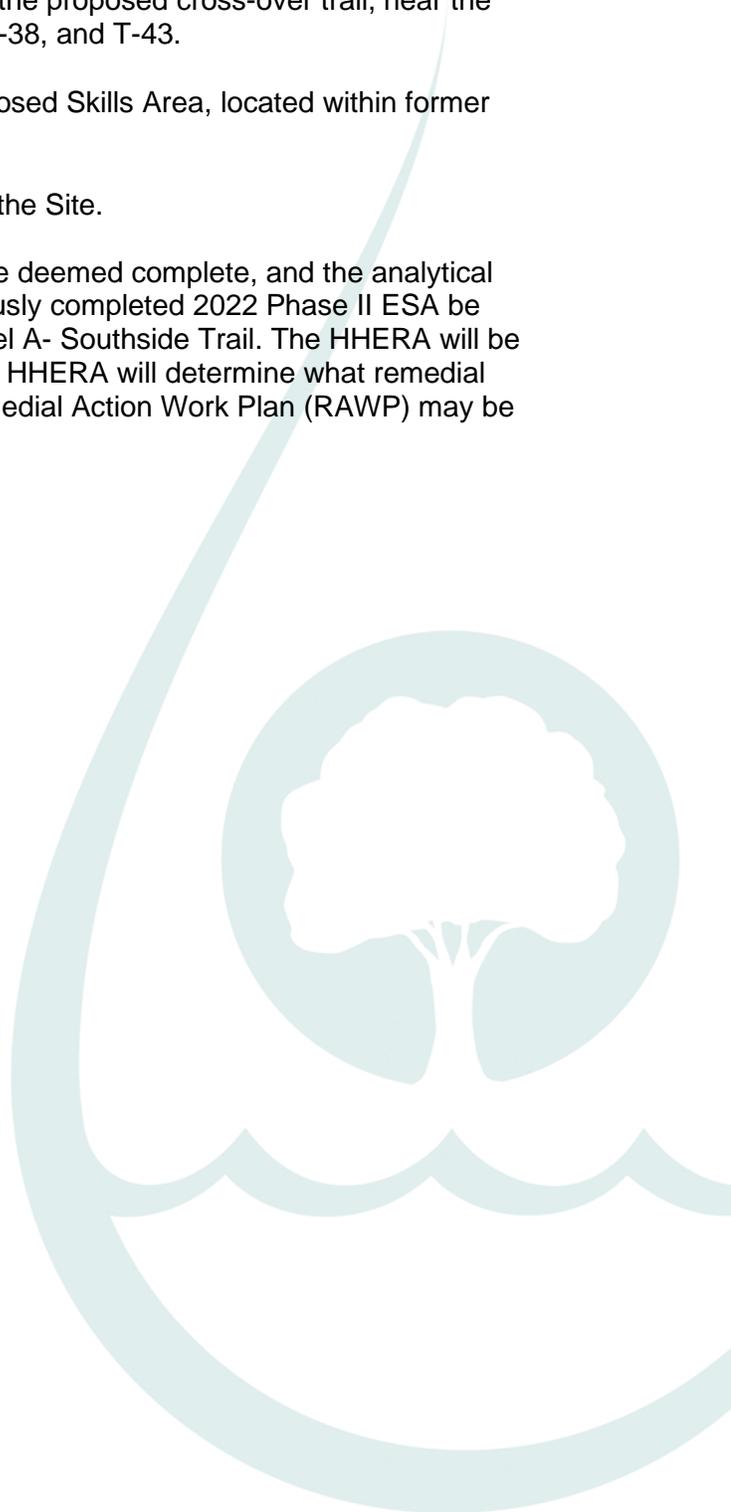


6.0 CONCLUSIONS AND RECOMMENDATIONS

Based on the White Park, Parcel A – Southside Trail supplemental site assessment investigations, Environmental Standards concludes:

- benzo(a)pyrene is a COC in surface soil in the proposed cross-over trail, near the confluence of former AST locations T-37, T-38, and T-43.
- arsenic is a COC in surface soil in the proposed Skills Area, located within former AST location T-39.
- Groundwater is an incomplete pathway for the Site.

We recommend the site assessment of Parcel A be deemed complete, and the analytical data derived from this investigation and the previously completed 2022 Phase II ESA be used to perform a *de minimis* HHERA for the Parcel A- Southside Trail. The HHERA will be submitted under separate cover. The results of the HHERA will determine what remedial actions are necessary for the Site. As such, a Remedial Action Work Plan (RAWP) may be submitted under the same cover as the HHERA.



7.0 REFERENCES

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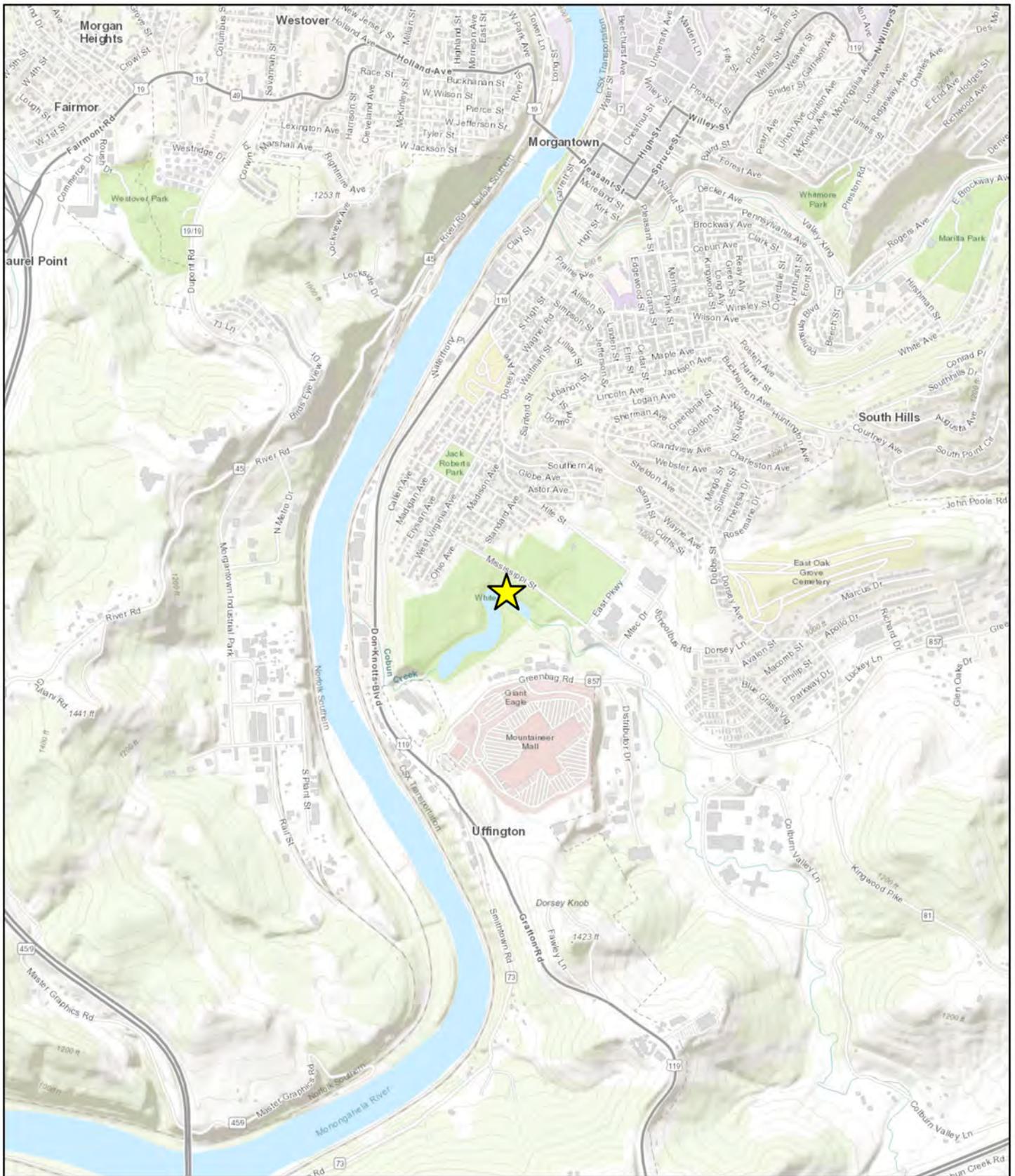
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West Virginia Voluntary Remediation and Redevelopment Act Guidance Manual, December 2022.

FIGURES





West Virginia GIS, Esri, HERE, Garmin, INCREMENT P, USGS, METI/NASA, EPA, USDA

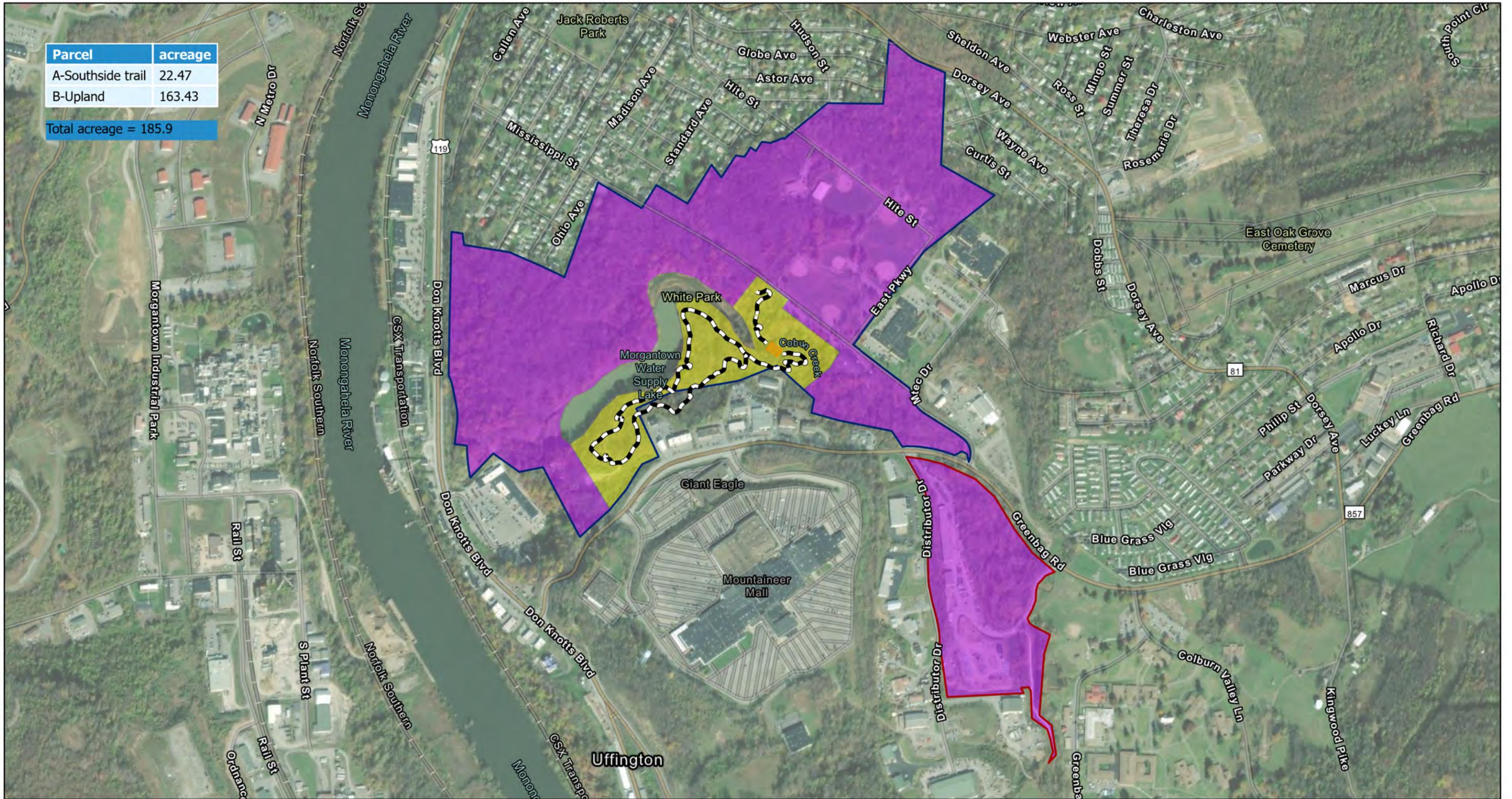
 SITE LOCATION



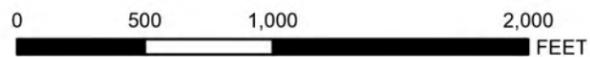
0 0.25 0.5 1
MILES

CREATION DATE: JANUARY 10, 2022	PROJECT NO: 20219527.A	FIGURE 1: SITE TOPOGRAPHIC MAP
	DRAWN BY: BPD APPRVD BY: LM	
	CHEK'D BY: MNW REVISION: 0	WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV

Parcel	acreage
A-Southside trail	22.47
B-Upland	163.43
Total acreage = 185.9	

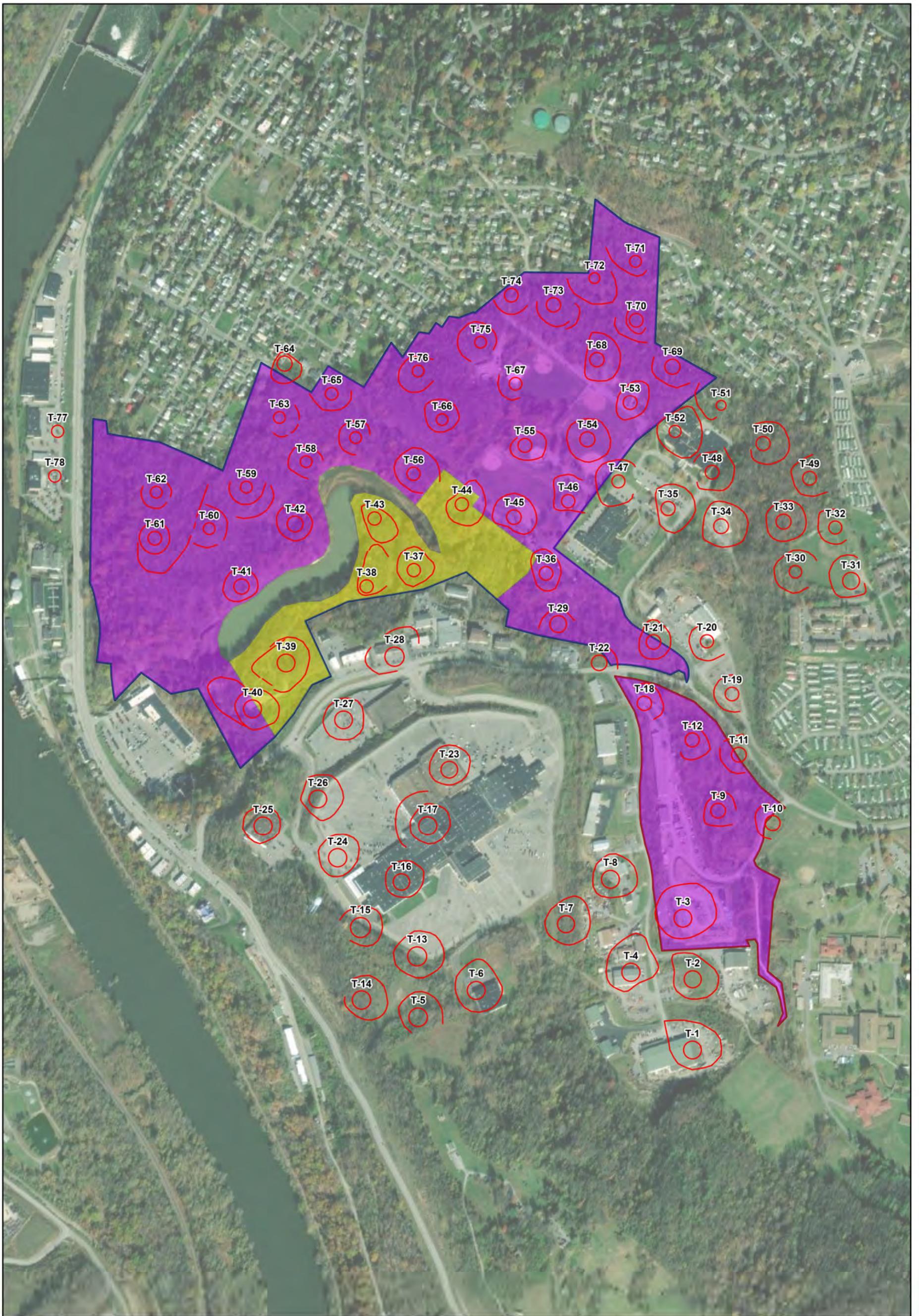


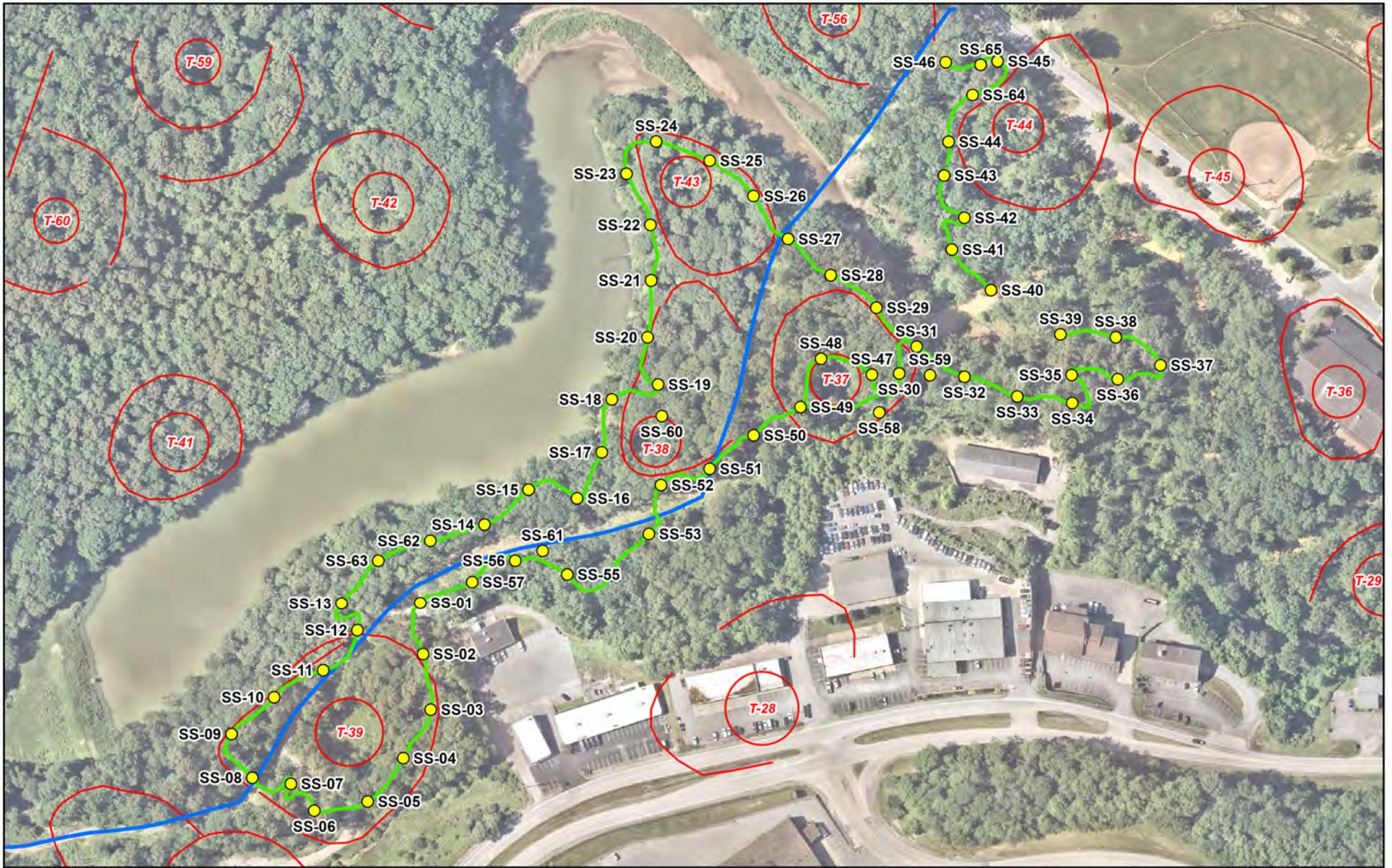
-  SOUTHSIDE TRAIL
-  BRIDGE
-  A-SOUTHSIDE TRAIL
-  B-UPLAND
-  MUB CAMPUS
-  WHITE PARK



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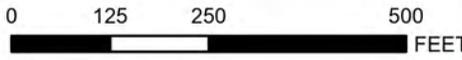
CREATION DATE: DECEMBER 5, 2022	PROJECT NO: 20229836.A	FIGURE 2: SITE LOCATION, AERIAL PHOTOGRAPH
DRAWN BY: MNW	APPRVD BY: LMW	
CHEKD BY: LM	REVISION: 0	WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV



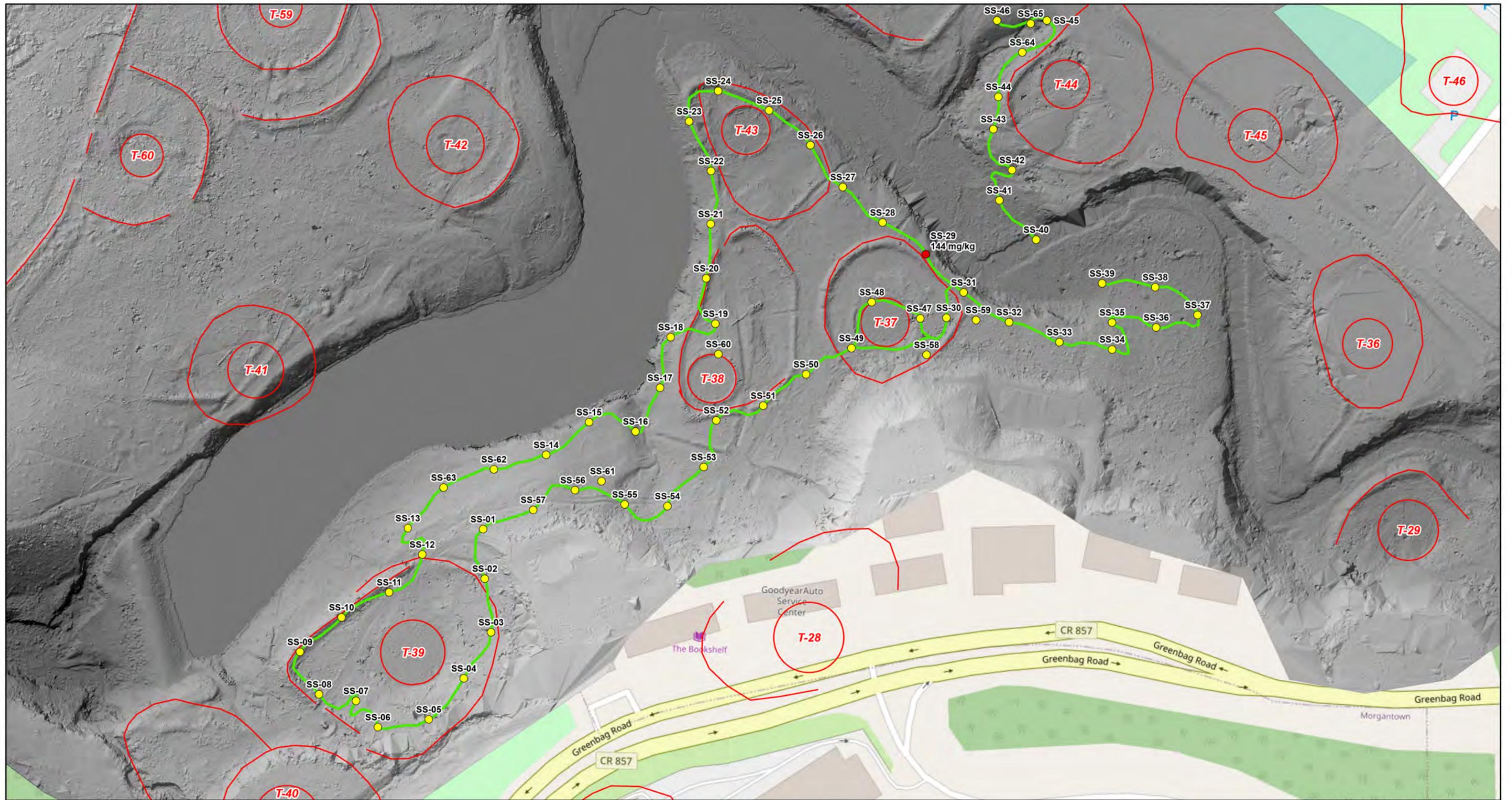


Nearmap, 2022.

- 2022 PHASE II SOIL SAMPLE - PROPOSED AND SAMPLED
- PROPOSED TRAIL
- APPROXIMATE HISTORICAL TANK AND SECONDARY CONTAINMENT
- APPROXIMATE MUB UNDERGROUND UTILITY LINES (WATER AND SEWER)



CREATION DATE: FEBRUARY 8, 2023		PROJECT NO: 20219527.A		FIGURE 4: 2022 PHASE II SAMPLE LOCATION MAP WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV
		DRAWN BY: MNW	APPR'VD BY: LM	
		CHEK'D BY: MNW	REVISION: 0	

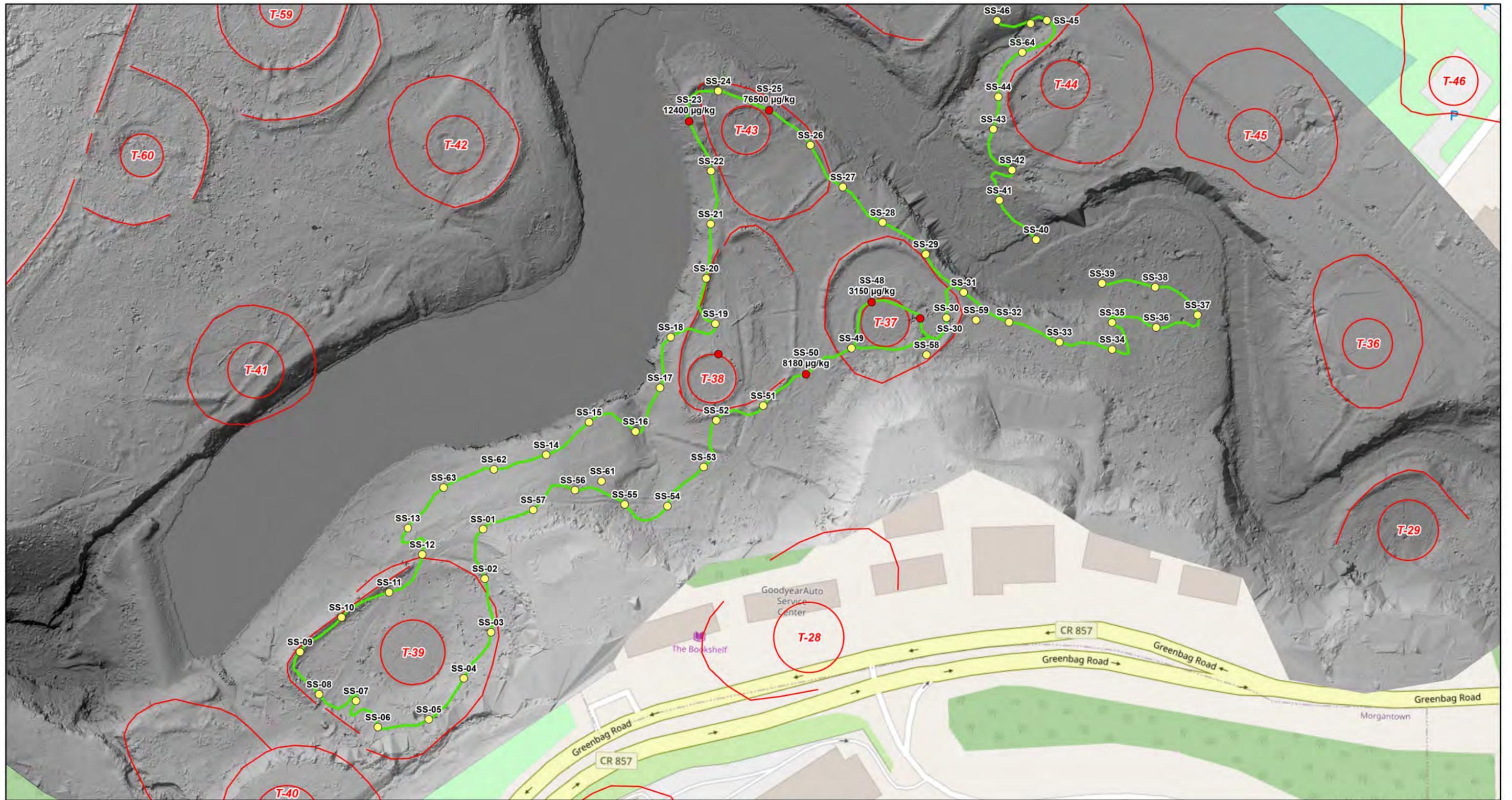


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- PROPOSED TRAIL
- APPROXIMATE HISTORICAL TANK AND SECONDARY CONTAINMENT
- SURFACE SOIL SAMPLE - EXCEEDS BOTH ARSENIC RECREATIONAL RBC AND IS A UCL OUTLIER
- SURFACE SOIL SAMPLE

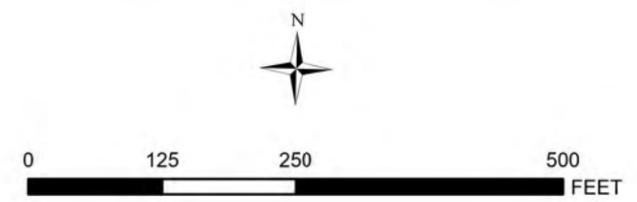


CREATION DATE: FEBRUARY 8, 2023	PROJECT NO: 20219527.A	FIGURE 5: ARSENIC SURFACE SOIL EXCEEDANCES WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV
	DRAWN BY: MNW CHECKD BY: LM	

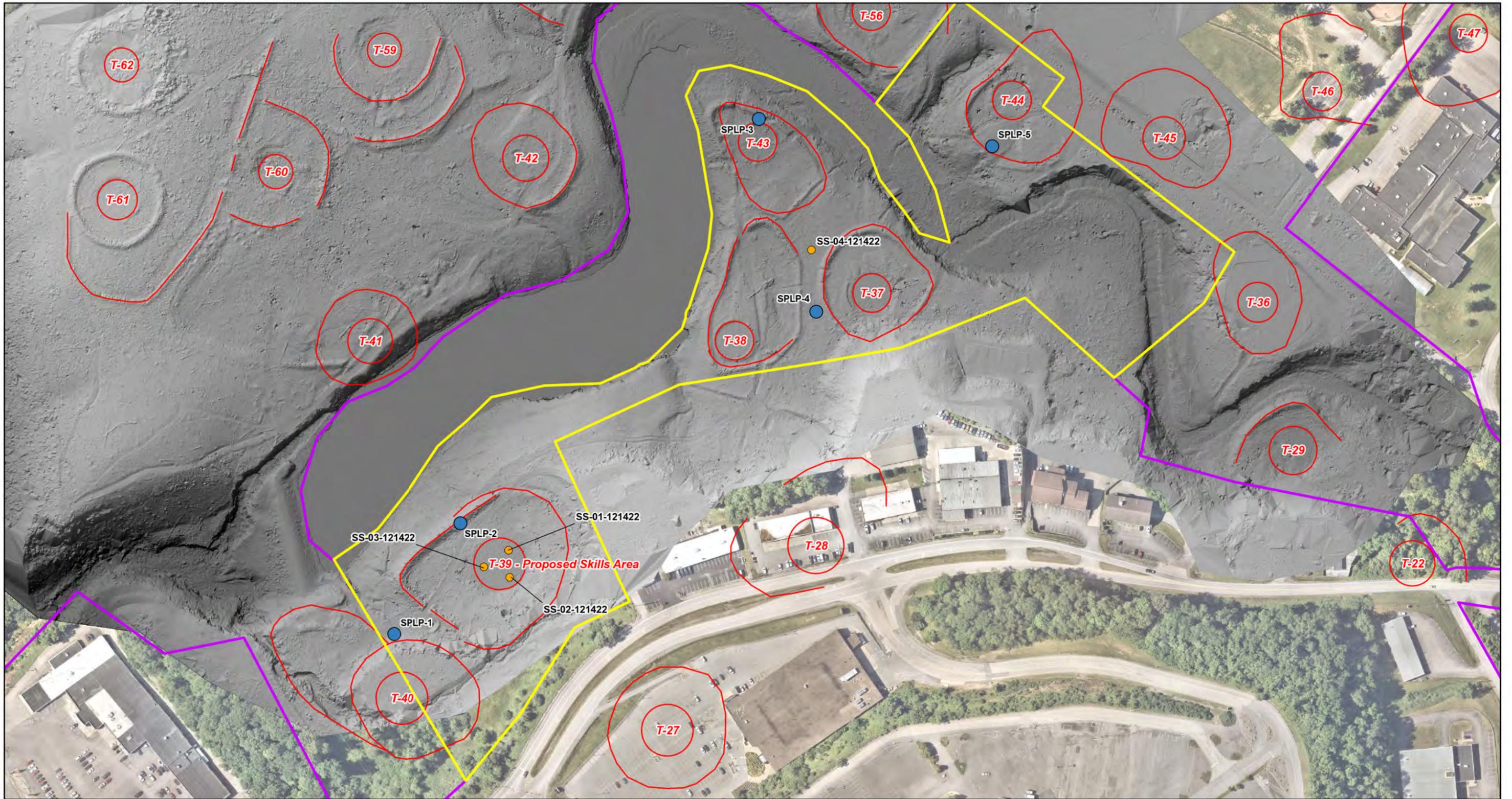


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- PROPOSED TRAIL
- APPROXIMATE HISTORICAL TANK AND SECONDARY CONTAINMENT
- SURFACE SOIL SAMPLE - EXCEEDS BOTH BENZO(A)PYRENE RECREATIONAL RBC AND IS A UCL OUTLIER
- SURFACE SOIL SAMPLE

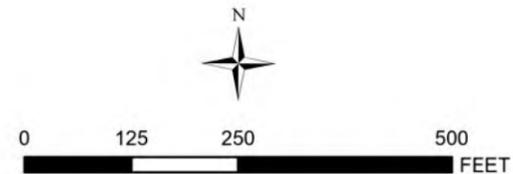


CREATION DATE: FEBRUARY 8, 2023	PROJECT NO: 20219527.A	FIGURE 6: BENZO(A)PYRENE SURFACE SOIL EXCEEDANCES WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV
	DRAWN BY: MNW CHECKD BY: LM	



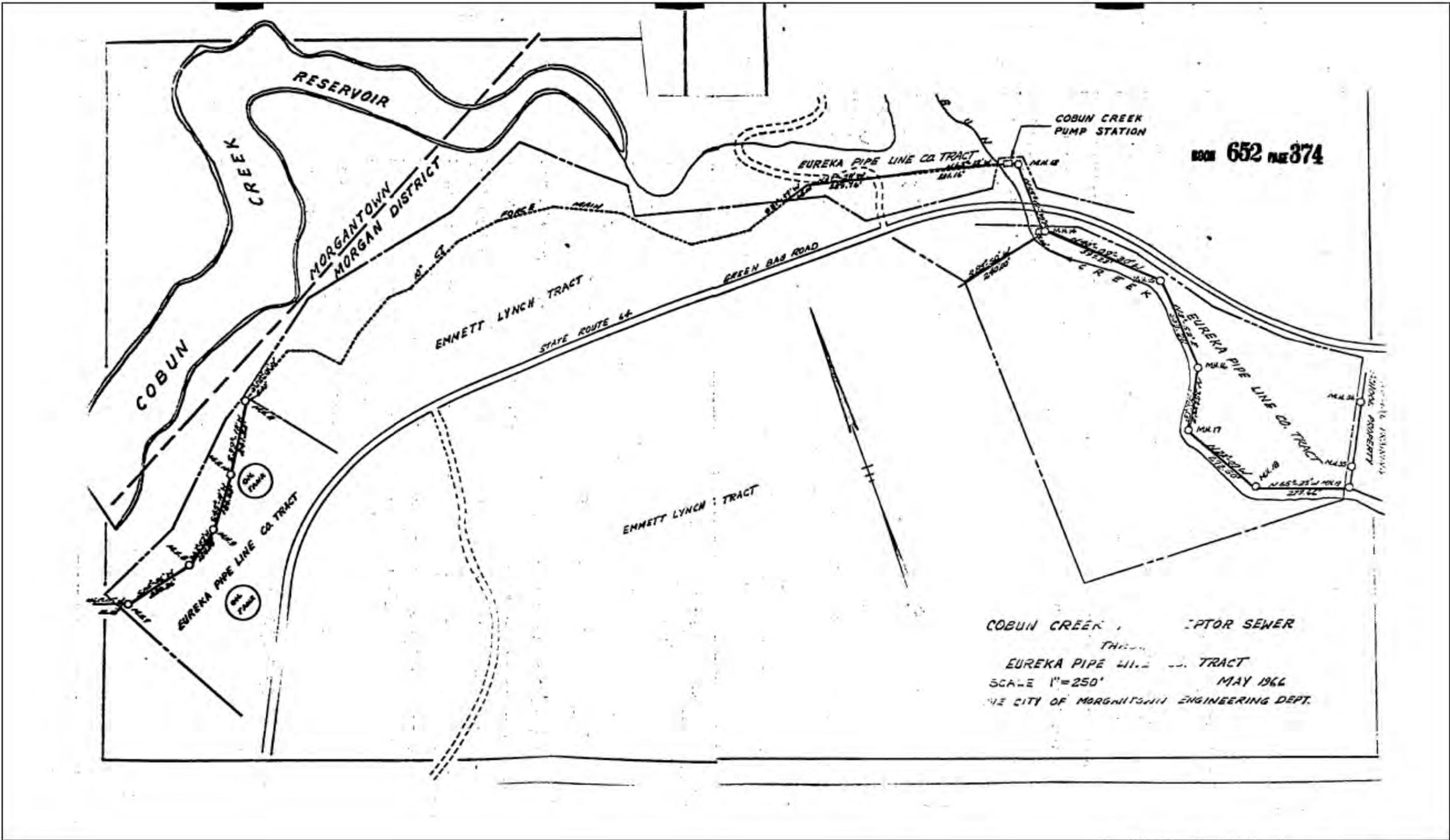
Nearmap, 2022.

- A-SOUTHSIDE TRAIL
- B-UPLAND
- APPROXIMATE HISTORICAL TANK AND SECONDARY CONTAINMENT
- SPLP SOIL SAMPLE LOCATIONS
- DECEMBER 2022 SURFACE SOIL SAMPLES



CREATION DATE: FEBRUARY 8, 2023	PROJECT NO: 20229836.A	FIGURE 7: 2022 SSAR SAMPLE LOCATIONS
ENVIRONMENTAL STANDARDS	DRAWN BY: MNW CHECKD BY: LM	
WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV		

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CREATION DATE: MARCH 6, 2023	PROJECT NO: 20219527.A	FIGURE 8: MORGANTOWN SANITARY BOARD ROW WHITE PARK - MISSISSIPPI STREET MORGANTOWN, MONINGALIA COUNTY, WV
DRAWN BY: MNV	APPRVD BY: LMW	
CHEKD BY: LM	REVISION: 0	

TABLES



Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL		SS-01 (0-2)	SS-01 (0-2) DUP	SS-02 (0-2)	SS-03 (0-2)	SS-03 (6-8)	SS-04 (0-2)	SS-05 (0-2)	SS-06 (0-2)	SS-07 (0-2)	SS-08 (0-2)	SS-09 (0-2)	SS-10 (0-2)		
				Date:	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022
				Units	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result
RCRA Metals																		
Arsenic**	30	13.1	13.1	mg/kg	11.2	6.4 J	12.2	12.4	14.1	8.5	10.0	11.6	14.5	10.5	9.3	6.8		
Barium	220000	15000	21800	mg/kg	80.8	58.7	87.8	100	210	141	118	242	190	130	163	108		
Cadmium	530	37	10	mg/kg	<0.13	<0.19	<0.15	<0.15	<0.14	<0.15	<0.15	<0.15	<0.14	<0.16	<0.15	0.52 J		
Chromium (RBCr)	1000000	120000	120000	mg/kg	12.7	8.4	29.0	31.1	36.8	27.0	30.9	40.2	30.1	25.7	30.2	19.6		
Lead (RBCr)	800	400	400	mg/kg	5.3 J	20.7	18.4	30.9	31.6	20.1	25.8	14.5	16.3	79.8	25.1	21.5		
Mercury	3.1	3.1	91.2	mg/kg	0.023J	0.021J	0.035J	0.036J	0.062J	0.034J	0.072J	0.077J	0.062J	0.070J	0.076J	0.053J		
Selenium	5800	390	547	mg/kg	3.3 J	2.1 J	3.0 J	3.1 J	2.6 J	2.0 J	1.7 J	3.1 J	2.8 J	2.5 J	2.8 J	1.9 J		
Silver	5800	390	548	mg/kg	4.3	4.5	12.3	22.0	25.8	17.2	18.0	18.9	18.1	17.6	19.5	12.5		
Zinc	23000	350000	32900	mg/kg	43.4J	54.8	53.3	48.0	0.062J	58.1	53.6	78.5	73.7	69.9	64.3	71.6		
PAHs																		
Acenaphthene	47000000	4100000	5020000	ug/kg	<6.7	<9.2	<0.73	<0.74	<0.70	<0.72	<0.75	<0.77	<0.70	<7.9	<0.74	<0.74		
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<5.3	<7.3	<0.58	<0.59	<0.55	<0.57	<0.59	<0.61	<0.55	<6.2	<0.59	<0.59		
Anthracene	350000000	23000000	25100000	ug/kg	54.4 J	9.5 J	<0.73	<0.74	<0.7000	<0.72	<0.75	<0.77	<0.70	<7.9	<0.74	<0.74		
Benzo[a]anthracene	320000	1500	1600	ug/kg	125	38.0 J	<0.95	2.2 J	<0.70	<0.94	<0.97	1.4 J	<0.91	47.8 J	1.5 J	<0.96		
Benzo[a]pyrene	21000	110	161	ug/kg	116	29.3 J	<0.51	1.2 J	0.49 J	<0.50	<0.52	<0.53	<0.48	52.8 J	0.61 J	<0.51		
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	213	58.5 J	<0.97	2.3 J	1.8 J	<0.96	<0.99	<1.0	<0.93	103	<0.98	4.2 J		
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	70.1 J	20.0 J	<1.2	<1.2	<1.2	<1.2	<1.2	<1.3	<1.2	28.9 J	<1.2	<1.2		
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	210	57.7 J	<1.4	2.3 J	1.7 J	<1.3	<1.4	<1.4	<1.3	101	<1.4	4.1 J		
Chrysene	21000000	110000	161000	ug/kg	135	38.1 J	<0.42	1.4 J	0.77 J	<0.41	<0.43	0.81 J	<0.40	54.0 J	<0.42	<0.42		
Dibenz[a,h]anthracene	21000	110	161	ug/kg	19.7 J	<22.5	<1.8	<1.8	<1.7	<1.8	<1.8	<1.9	<1.7	<19.3	<1.8	<1.8		
Fluoranthene	30000000	2400000	3350000	ug/kg	273	96.1 J	<0.61	3.0 J	1.1 J	<0.60	<0.63	<0.64	<0.59	77.9 J	1.4 J	2.6 J		
Fluorene	37000000	2900000	3350000	ug/kg	<6.8	<9.4	<0.75	<0.76	<0.71	<0.74	<0.77	<0.79	<0.72	<8.0	<0.76	<0.76		
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	58.4 J	<19.3	<1.5	<1.6	<1.5	<1.5	<1.6	<1.6	<1.5	27.4 J	<1.6	<1.6		
Naphthalene*	110000	2400	5010	ug/kg	<14.3	<19.7	<1.6	<1.6	<1.5 / <1.1	2.9 J	<1.6	<1.6	<1.5	32.1 J / <0.98	<1.6	1.9 J		
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	89.1	56.8 J	<0.71	2.1 J	<0.68	<0.70	<0.73	1.3 J	<0.68	47.0 J	1.6 J	2.6 J		
Pyrene	34000000	2300000	2510000	ug/kg	212	80.0 J	<0.91	2.4 J	1.0 J	<0.90	<0.93	<0.95	<0.87	66.6 J	1.1 J	2.3 J		
Moisture Content																		
Percent Moisture			--	%	9.4	35.0	19.5	19.3	15.6	16.5	19.2	22.4	15.3	23.8	19.8	19.7		

Notes:

de minimis RBC = Risk-based concentration WV VRP residential and industrial soil de minimis values (Table 60-9, revised December 2021)

RSL = Regional screening level for a recreator (rail trail user) using USEPA Regional Screening Level (RSL) generator on Feb 13, 2022 for HQ=1, Cancer Risk 1x10⁻⁶, EF=250 days/yr, ET=4.0 hr/day.

RBCr = In the absence of a recreator RBC, the residential soil RBC is used, as defined in the West Virginia Voluntary Remediation and Redevelopment Act Table 60-3B De Minimis, December 2021.

**Arsenic soil RBC is the maximum published background concentration (VRP Guidance Manual, Table 3-3: Background Concentrations of Elements in WV Soils).

* = Naphthalene reported as Method 8270 SIM/Method 8260.

< - Indicates analyte was not detected above Laboratory Method Detection Limit

J - indicates estimated result. The results is between the detection limit and the reporting limit.

" ---" - No standard available

mg/kg - milligrams per kilogram

ug/kg - micrograms per kilogram

NA= Not analyzed

Highlighted and bold results - Result is above the Standard.

Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL		SS-11 (0-2)	SS-11 (4-6)	SS-12 (0-2)	SS-13 (0-2)	SS-14 (0-2)	SS-15 (0-2)	SS-15 (4-6)	SS-16 (0-2)	SS-17 (0-2)	SS-18 (0-2)	SS-19 (0-2)	SS-20 (0-2)		
				Date:	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022
				Units	Dry Result	Dry Result	Dry Result											
RCRA Metals																		
Arsenic**	30	13.1	13.1	mg/kg	12.9	10.6	20.3	26.7	16.0	6.6 J	9.5	6.9	8.6	26.5	9.9	12.0		
Barium	220000	15000	21800	mg/kg	90.0	115	75.3	70.0	37.4	122	104	94.0	29.7	54.6	38.2	39.9		
Cadmium	530	37	10	mg/kg	<0.15	<0.14	<0.14	<0.15	<0.14	<0.17	<0.15	<0.15	<0.15	<0.16	<0.16	<0.15		
Chromium (RBCr)	1000000	120000	120000	mg/kg	28.1	26.9	21.5	26.8	19.5	21.5	31.5	25.9	21.7	37.3	17.1	31.3		
Lead (RBCr)	800	400	400	mg/kg	21.9	18.5	18.4	15.2	11.8	17.0	26.8	16.7	7.6	34.5	26.0	18.5		
Mercury	3.1	3.1	91.2	mg/kg	0.057J	0.046J	0.058J	0.039J	0.020J	0.031J	0.058J	0.046J	0.024J	0.060J	0.077J	0.054J		
Selenium	5800	390	547	mg/kg	1.9J	3.7J	2.3J	2.7J	<1.2	<1.5	4.7J	2.9J	1.8J	3.3J	2.1J	2.7J		
Silver	5800	390	548	mg/kg	18.4	18.2	20.5	28.2	16.5	8.6	31.8	24.0	19.5	27.5	12.7	22.0		
Zinc	23000	350000	32900	mg/kg	51.1	50.7	77.2	116	48.2	55.8	84.6	61.7	47.1	72.0	42.5	46.6		
PAHs																		
Acenaphthene	47000000	4100000	5020000	ug/kg	<0.74	<0.68	<7.1	<0.72	<0.68	<0.83	<0.74	5.2 J	4.8 J	<0.77	9.9 J	<0.75		
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<0.59	<0.53	<5.6	<0.57	<0.54	<0.65	<0.58	<0.59	31.7	1.9 J	42.5 J	8.1 J		
Anthracene	350000000	23000000	25100000	ug/kg	<0.74	<0.68	141	<0.72	<0.69	<0.83	<0.74	9.8	76.5	2.1 J	78.3 J	10.3		
Benzo[a]anthracene	320000	1500	1600	ug/kg	<0.96	<0.88	232	<0.93	<0.89	<1.1	<0.96	18.0	448	11.5	344	67.6		
Benzo[a]pyrene	21000	110	161	ug/kg	<0.51	<0.47	180	<0.50	<0.47	<0.57	<0.51	21.3	353	9.1	295	58.8		
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	<0.98	<0.89	318	<0.95	<0.91	<1.1	<0.98	40.0	675	23.4	675	138		
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	<1.2	<1.1	83.6	<1.2	<1.1	<1.4	<1.2	11.3	192	3.1 J	87.9	17.3		
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	<1.4	<1.3	314	<1.3	<1.3	<1.5	<1.4	39.5	665	23.1	666	136		
Chrysene	21000000	110000	161000	ug/kg	<0.42	<0.39	218	<0.41	<0.39	<0.47	<0.42	19.6	431	12.2	362	71.9		
Dibenz[a,h]anthracene	21000	110	161	ug/kg	<1.8	<1.7	26.3 J	<1.8	<1.7	<2.0	<1.8	3.4 J	71.2	<1.9	36.5 J	7.1 J		
Fluoranthene	30000000	2400000	3350000	ug/kg	<0.62	<0.57	599	<0.60	<0.57	<0.69	<0.62	49.0	874	22.8	831	152		
Fluorene	37000000	2900000	3350000	ug/kg	<0.76	<0.69	<7.2	<0.74	<0.70	<0.84	<0.75	6.2 J	12.0	<0.79	25.4 J	<0.77		
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	<1.6	<1.4	83.6	<1.5	<1.4	<1.7	<1.6	11.1	210	3.7 J	105	19.8		
Naphthalene*	110000	2400	5010	ug/kg	<1.6	<1.4	<15.1	<1.5	<1.5 / <1.4	<1.8	<1.6	6.0 J	8.2	<1.6 / <1.3	22.9 J	6.6 J		
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	<0.72	0.74 J	221	<0.70	<0.67	<0.80	<0.72	36.5	350	7.7 J	467	53.3		
Pyrene	34000000	2300000	2510000	ug/kg	<0.92	<0.84	449	<0.89	<0.85	<1.0	<0.92	37.7	655	18.4	632	115		
Moisture Content																		
Percent Moisture			-	%	18.9	11.4	16.9	17.3	14.0	27.6	19.8	21.0	17.4	22.4	23.3	20.6		

Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL		SS- 21 (0-2)	SS-22- (0-2)	SS-23 (0-2)	SS-24(0-2)	SS-25 (0-2)	SS-26 (0-2)	SS-27 (0-2)	SS-28 (0-2)	SS-28 (0-2) FD	SS-29 (0-2)	SS-30 (0-2)	SS-30 (4-6)		
				Date:	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/21/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022
				Units	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result
RCRA Metals																		
Arsenic**	30	13.1	13.1	mg/kg	14.5	9.8	18.6	8.8	8.1	3.2 J	8.1	10.3	9.1	144	7.4	10		
Barium	220000	15000	21800	mg/kg	56.4	107	101	46.2	51.6	78.6	54.3	49.6	48.7	163	113	67.1		
Cadmium	530	37	10	mg/kg	0.47 J	0.51 J	0.25 J	0.15 J	<0.18	<0.13	0.20 J	<0.15	<0.15	0.45 J	<0.16	<0.14		
Chromium (RBCr)	1000000	120000	120000	mg/kg	23.7	25.9	20.6	16.4	13.6	14.6	18.5	21.9	20.7	21.9	17.4	19.2		
Lead (RBCr)	800	400	400	mg/kg	15.4	30.7	62.2	18.9	278	9.5	10.4	12.0	10.6	143	17.8	18.8		
Mercury	3.1	3.1	91.2	mg/kg	0.054J	0.082J	0.077J	0.061J	0.14J	0.020J	0.047J	0.053J	0.047J	1.5	0.047J	0.049J		
Selenium	5800	390	547	mg/kg	<1.4	<1.5	1.4 J	<1.3	<1.6	<1.2	<1.2	<1.3	<1.3	<1.8	<1.4	<1.3		
Silver	5800	390	548	mg/kg	<0.55	<0.59	<0.52	<0.50	<0.63	<0.47	<0.47	<0.52	<0.53	<0.71	<0.56	<0.51		
Zinc	23000	350000	32900	mg/kg	57.9	115.0	107.0	50.4	57.0	45.6	60.0	47.4	47.4	132	47.5	49.9		
PAHs																		
Acenaphthene	47000000	4100000	5020000	ug/kg	<0.74	2.2 J	96.5	<7.0	1760	<0.65	2.4 J	<0.72	<0.72	<10	<0.76	<0.70		
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<0.59	13.2	1190	30.5 J	10200	3.8 J	1.1 J	<0.57	<0.57	<7.9	<0.60	<0.56		
Anthracene	350000000	23000000	25100000	ug/kg	1.7 J	22.5	3850	55.6 J	33200	8.0	15.6	<0.72	1.2 J	19.9 J	<0.76	1.6 J		
Benzo[a]anthracene	320000	1500	1600	ug/kg	8.5	112	11200	340	112000	37.5	50.3	2.1 J	6.7 J	101 J	<0.99	8.1		
Benzo[a]pyrene	21000	110	161	ug/kg	6.3 J	85.6	12400	267	76500	28	69.8	1.1 J	6.0 J	86.6 J	<0.53	7.1 J		
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	15.0	232	23100	611	161000	70.5	149	2.6 J	16.2	255	<1.0	18.2		
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	1.7 J	26.3	3550	84.0	38500	7.2 J	21.6	<1.2	1.8 J	25.8 J	<1.3	1.9 J		
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	14.8	229	23100	602	161000	69.5	147	2.6 J	16	252	<1.4	18		
Chrysene	21000000	110000	161000	ug/kg	8.4	124	10700	324	103000	35	53.3	<0.41	8.8	168	<0.44	8.2		
Dibenz[a,h]anthracene	21000	110	161	ug/kg	<1.8	11.7	1900	35.7 J	16700	3.2 J	6.9 J	<1.8	<1.8	<24.5	<1.9	<1.7		
Fluoranthene	30000000	2400000	3350000	ug/kg	17.0	254	24900	703	250000	85.6	121	3.6 J	17.2	219	<0.64	18.4		
Fluorene	37000000	2900000	3350000	ug/kg	<0.76	5.6 J	261	<7.1	2060	<0.67	5.0 J	<0.74	<0.74	<10.2	<0.78	<0.72		
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	2.1 J	31.1	4370	98.0	44800	9.1	22.5	<1.5	2.0 J	30.5 J	<1.6	2.2 J		
Naphthalene*	110000	2400	5010	ug/kg	5.2 J / <2.0	33.3	100	<14.9	998	3.7 J	2.3 J	<1.5	8.7	66.7 J	<1.6	3.4 J / <1.1		
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	9.2	135	15200	279	164000	42.5	52.7	<0.70	12.4	127	0.84 J	10.9		
Pyrene	34000000	2300000	2510000	ug/kg	13.0	185	17400	533	175000	60.4	99.4	2.6 J	12.3	171	<0.95	14.2		
Moisture Content																		
Percent Moisture			-	%	20.6	28.9	18.1	14.7	31.7	7.5	11.7	17.3	18.4	41.1	21.6	15.1		

Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL	Date:	SS-31 (0-2)	SS-32 (0-2)	SS-33 (0-2)	SS-34 (0-2)	SS-35 (0-2)	SS-36 (0-2)	SS-37 (0-2)	SS-38 (0-2)	SS-39 (0-2)	SS-40 (0-2)	SS-41 (0-2)	SS-42 (0-2)
					1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022	1/24/2022
				Units	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result						
RCRA Metals																
Arsenic**	30	13.1	13.1	mg/kg	11.2	0.10	6.8	8.9	0.075	6.9	7.8	6.9 J	5.9 J	7.4	8.5	5.7
Barium	220000	15000	21800	mg/kg	65.2	0.76	129	95.7	0.85	112	101	114	54.7	51.9	65.9	59.8
Cadmium	530	37	10	mg/kg	<0.14	<0.0016	<0.15	0.18 J	<0.0015	<0.15	<0.14	0.25 J	<0.15	<0.14	<0.14	0.26 J
Chromium (RBCr)	1000000	120000	120000	mg/kg	22.6	0.18	15.8	15.2	0.19	17.2	19.1	16.0	16.9	13.8	20.5	19.2
Lead (RBCr)	800	400	400	mg/kg	14.9	0.19	18.4	33.8	0.14	22.2	12.1	38.1	11.4	13.9	12.1	27.8
Mercury	3.1	3.1	91.2	mg/kg	0.050 J	0.056 J	0.048 J	0.10 J	0.047 J	0.031 J	0.045 J	0.071 J	0.046 J	0.047 J	<0.011	0.062 J
Selenium	5800	390	547	mg/kg	<1.3	<0.014	<1.3	2.6 J	<0.013	3.0 J	<1.3	<1.5	<1.3	<1.3	<1.2	<1.2
Silver	5800	390	548	mg/kg	<0.51	<0.0057	<0.52	<0.60	<0.0052	<0.54	<0.51	<0.61	<0.52	<0.50	<0.50	<0.46
Zinc	23000	350000	32900	mg/kg	44.7	0.45	52.2	59	0.49	46.7	41.5	56.3	45.4	48.2	63.1	73.0
PAHs																
Acenaphthene	47000000	4100000	5020000	ug/kg	<0.72	<0.78	<0.74	11.2 J	8.8	<0.76	<0.70	<0.82	<0.74	<7.1	<0.68	<3.3
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<0.57	<0.62	<0.59	28.3 J	36.9	<0.60	<0.55	<0.65	<0.58	<5.6	<0.54	<2.6
Anthracene	350000000	23000000	25100000	ug/kg	<0.72	2.7 J	<0.74	89.4	78.0	<0.76	<0.70	1.9 J	<0.74	<7.1	0.90 J	6.1 J
Benzo[a]anthracene	320000	1500	1600	ug/kg	1.3 J	13.1	<0.96	336	419	5.1 J	1.5 J	8.8 J	<0.96	<9.2	5.4 J	36.2 J
Benzo[a]pyrene	21000	110	161	ug/kg	0.60 J	13.1	<0.51	276	395	4.9 J	<0.48	8.4 J	<0.51	<4.9	4.5 J	31.9 J
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	<0.95	33.8	2.4 J	581	792	10.4	2.6 J	21.4	<0.98	<9.4	11.1	86.6
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	<1.2	3.7 J	<1.2	116	143	2.6 J	<1.2	4.3 J	<1.2	<11.8	<1.1	<5.5
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	<1.3	33.4	2.4 J	582	793	10.4	2.6 J	21.5	<1.4	<13.1	11.2	86.8
Chrysene	21000000	110000	161000	ug/kg	<0.41	16.6	<0.42	325	413	5.4 J	<0.40	10.7	<0.42	<4.0	5.8 J	43.4
Dibenz[a,h]anthracene	21000	110	161	ug/kg	<1.8	<1.9	<1.8	42.0 J	55.9	<1.9	<1.7	<2.0	<1.8	<17.4	<1.7	<8.1
Fluoranthene	30000000	2400000	3350000	ug/kg	<0.60	30.6	1.7 J	802	854	9.7	2.5 J	20.4	<0.62	20.3 J	11.1	82.5
Fluorene	37000000	2900000	3350000	ug/kg	<0.73	<0.80	<0.76	29.4 J	16.4	<0.78	<0.72	<0.84	<0.75	<7.2	<0.70	<3.4
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	<1.5	4.0 J	<1.6	126	161	2.1 J	<1.5	4.1 J	<1.6	<14.9	<1.4	<7.0
Naphthalene*	110000	2400	5010	ug/kg	<1.5 / <1.0	17.0	<1.6	37.7 J	18.1	3.0 J	1.8 J / <1.0	6.4 J	<1.6	<15.1	6.8 J / 0.0	21.0 J
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	1.1 J	22.3	0.98 J	452	336	5.6 J	15 J	14.9	1.2 J	17.7 J	7.3 J	53.3
Pyrene	34000000	2300000	2510000	ug/kg	1.1 J	25.0	1.4 J	599	689	7.8 J	2.0 J	17.1	<0.92	16.9 J	9.3	65.4
Moisture Content																
Percent Moisture			-	%	17.0	23.6	19.2	30.1	16.9	20.7	13.5	28.2	19.8	15.7	14.1	9.3

Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL		SS-43 (0-2)	SS-44 (0-2)	SS-45 (0-2)	SS-46 (0-2)	SS-47 (0-2)	SS-48 (0-2)	SS-49 (0-2)	SS-50 (0-2)	SS-51 (0-2)	SS-52 (0-2)	SS-53 (0-2)	SS-54 (0-2)	
				Date:	1/24/2022	1/24/2022	1/24/2022	1/24/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022
				Units	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result
RCRA Metals																	
Arsenic**	30	13.1	13.1	mg/kg	5.5 J	3.9 J	8.2	5.7 J	10	9	9.2	4.0 J	22	5.0 J	6.3 J	6.7 J	
Barium	220000	15000	21800	mg/kg	43.8	42.9	111	55	31.6	69.3	59.9	59.5	62.3	54.9	91.9	102	
Cadmium	530	37	10	mg/kg	<0.15	<0.14	<0.15	<0.15	<0.19	0.26 J	<0.22	0.24 J	<0.25	<0.17	0.23 J	0.37 J	
Chromium (RBCr)	1000000	120000	120000	mg/kg	21.0	18.0	25.5	15.7	16.2	16.4	20.3	9.7	35.9	11.5	16.3	13.8	
Lead (RBCr)	800	400	400	mg/kg	16.4	17.4	22	13.2	84.5	41.4	315	15.6	32.9	17.4	28	20.7	
Mercury	3.1	3.1	91.2	mg/kg	0.051 J	0.049 J	0.076 J	0.068 J	0.12 J	0.072 J	0.096 J	0.076 J	0.19 J	0.087	0.14 J	0.093 J	
Selenium	5800	390	547	mg/kg	<1.3	<1.3	1.3 J	<1.3	1.7 J	2.2 J	2.3 J	2.2 J	3.6 J	<1.5	3.8 J	1.8 J	
Silver	5800	390	548	mg/kg	<0.51	<0.50	<0.52	<0.54	<0.67	<0.69	<0.78	<0.65	<0.88	<0.59	<0.75	<0.66	
Zinc	23000	350000	32900	mg/kg	56.4	49.7	72.5	46.4	NA	NA	NA	NA	NA	NA	NA	NA	
PAHs																	
Acenaphthene	47000000	4100000	5020000	ug/kg	<0.71	<0.69	15.7 J	<3.6	53.1 J	51.2 J	<5.4	259	8.4 J	<4.1	<5.2	<4.6	
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<0.56	<0.55	16.9 J	15.0 J	165	201	<4.2	<7.1	42.2 J	<3.2	<4.1	<3.6	
Anthracene	350000000	23000000	25100000	ug/kg	<0.71	<0.69	84.6	18.5 J	520	819	39.6 J	2190	93.2	5.3 J	9.9 J	8.9 J	
Benzo[a]anthracene	320000	1500	1600	ug/kg	<0.92	<0.90	259	118	2450	4520	219	8760	467	36.1 J	73	58	
Benzo[a]pyrene	21000	110	161	ug/kg	<0.49	<0.48	236	105	1600	3150	146	8180	313	26.7 J	67.8	46.0 J	
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	<0.94	<0.92	544	277	3690	6530	308	13900	677	70.4	169	103	
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	<1.2	<1.2	60.4 J	32.7 J	1000	2020	83	5600	172	<6.8	43.6 J	30.2 J	
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	<1.3	<1.3	545	277	3720	6580	311	14000	683	71	171	104	
Chrysene	21000000	110000	161000	ug/kg	<0.40	<0.40	274	127	2540	4650	220	8510	471	45.6	108	68.7	
Dibenz[a,h]anthracene	21000	110	161	ug/kg	<1.7	<1.7	<17.8	<9.0	359	720	27.7 J	1450	61.7 J	<10	<12.7	<11.2	
Fluoranthene	30000000	2400000	3350000	ug/kg	1.1 J	1.4 J	539	273	5890	10000	459	18600	1000	87.2	181	127	
Fluorene	37000000	2900000	3350000	ug/kg	<0.72	<0.70	24.1 J	<3.7	86.5 J	88.8 J	<5.5	387	19.5 J	<4.2	<5.3	<4.7	
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	<1.5	<1.5	71.1 J	39.0 J	1010	2070	81.9	5220	180	<8.6	43.0 J	25.3 J	
Naphthalene*	110000	2400	5010	ug/kg	<1.5	1.6 J / <1.1	74.0 J	27.9 J	327	121	45.2 J	79.8 J	58.9 J	81.7	70	29.7 J	
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	0.90 J	2.0 J	479	123	3980	4940	259	4140	510	68.3	114	71.2	
Pyrene	34000000	2300000	2510000	ug/kg	<0.88	1.2 J	454	226	4270	7490	349	15900	745	64.7	139	99.6	
Moisture Content																	
Percent Moisture			-	%	15.8	13.1	19.0	19.2	34.9	38.7	43.7	34.6	51.2	26.5	42.8	36	

Table 1. 2022 Phase II ESA Soil Data
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil de minimis RBC	Residential Soil de minimis RBC	Recreator Trail User RSL		SS-55 (0-2)	SS-56 (0-2)	SS-57 (0-2)	SS-58 (0-2)	SS-59 (0-2)	SS-60 (0-2)	SS-60-FD (0-2)	SS-61 (0-2)	SS-62 (0-2)	SS-63 (0-2)	SS-64 (0-2)	SS-65 (0-2)		
				Date:	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022	3/8/2022
				Units	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result	Dry Result						
RCRA Metals																		
Arsenic**	30	13.1	13.1	mg/kg	7.2 J	8.7 J	9.0	9.6	16.6	16.2	13.5	11.2	14.8	17.1	7.6 J	4.6 J		
Barium	220000	15000	21800	mg/kg	138	155	73.1	92.9	215	46.5	43.9	245	47.4	128	61.2	66.5		
Cadmium	530	37	10	mg/kg	0.31 J	0.32 J	<0.19	<0.19	0.44 J	<0.19	<0.19	<0.16	<0.17	0.24J	<0.20	<0.17		
Chromium (RBCr)	1000000	120000	120000	mg/kg	23.3	27.4	18.1	22.3	40.6	21	19.7	29.6	23	29.9	18.1	14.2		
Lead (RBCr)	800	400	400	mg/kg	24.9	31	39.9	43.7	62.3	60.7	58.3	24.1	38.3	34	47	21.7		
Mercury	3.1	3.1	91.2	mg/kg	0.096 J	0.084 J	0.11 J	0.090 J	0.11 J	0.11 J	0.10 J	0.78 J	0.075 J	0.93 J	0.091 J	0.053 J		
Selenium	5800	390	547	mg/kg	2.9 J	3.0 J	1.9 J	2.0 J	4.5 J	2.7 J	3.1 J	3.1 J	2.8 J	3.1 J	2.4 J	<1.5		
Silver	5800	390	548	mg/kg	<0.80	<0.74	<0.67	<0.68	<0.70	<0.65	<0.66	<0.56	<0.58	<0.62	<0.69	<0.59		
Zinc	23000	350000	32900	mg/kg	NA	NA	NA	NA	NA	NA								
PAHs																		
Acenaphthene	47000000	4100000	5020000	ug/kg	<5.5	<5.2	<4.7	34.8 J	<4.9	<44.7	122 J	<3.9	<4.0	<4.3	<4.9	<4.2		
Acenaphthylene (RBCr)	51000000	4200000	4246000	ug/kg	<4.4	<4.1	<3.7	68.7 J	<3.8	311 J	362 J	<3.1	7.8 J	4.5 J	<3.8	<3.3		
Anthracene	350000000	23000000	25100000	ug/kg	16.3 J	13.0 J	5.4 J	383	7.4 J	397 J	1060	<3.9	6.8 J	8.0 J	12.0 J	12.6 J		
Benzo[a]anthracene	320000	1500	1600	ug/kg	97.9	87.5	44.7 J	1610	42.2 J	2210	3480	<5.1	36.3 J	81.2	71.1	72.5		
Benzo[a]pyrene	21000	110	161	ug/kg	76.2	65.1	36.3	1100	37.7 J	1510	2210	<2.7	25.1 J	99.5	63	59.1		
Benzo[b]fluoranthene	210000	1100	1610	ug/kg	167	161	103	2350	88.8	4180	5660	8.6 J	88.5	270	165	164		
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1793000	ug/kg	<9.2	<8.7	25.0 J	560	<8.1	771	1050	<6.6	<6.7	66.5	29.8 J	29.1 J		
Benzo[k]fluoranthene	2100000	11000	16100	ug/kg	168	163	104	2370	89.6	4220	5710	8.7 J	89.3	272	166	166		
Chrysene	21000000	110000	161000	ug/kg	108	99.1	72.9	1600	56.5	2490	3730	<2.2	62.7	135	103	117		
Dibenz[a,h]anthracene	21000	110	161	ug/kg	<13.5	<12.8	<11.5	189	<11.9	303 J	419 J	<9.7	<9.9	14.8 J	<11.9	<10.2		
Fluoranthene	30000000	2400000	3350000	ug/kg	210	192	122	3720	94.2	4560	8140	<3.3	131	183	175	174		
Fluorene	37000000	2900000	3350000	ug/kg	<5.6	<5.3	10.2 J	58.7 J	<5.0	<45.8	270 J	<4.0	<4.1	<4.4	21.4 J	17.0 J		
Indeno[1,2,3-cd]pyrene	210000	1100	1610	ug/kg	42.2 J	39.5 J	22.8 J	608	<10.2	856	1160	<8.3	<8.5	62.8	28.9 J	28.6 J		
Naphthalene*	110000	2400	5010	ug/kg	46.4 J	30.7 J/<1.7	141	64.1 J	45.4 J	273 J	315 J	<8.4	152	68.9	101	110/ <1.5		
Phenanthrene (RBCr)	350000000	23000000	23464000	ug/kg	133	103	118	2430	70.9	2200	6310	<3.8	131	90	150	164		
Pyrene	34000000	2300000	2510000	ug/kg	168	147	86.5	2740	76.1	3460	5940	<4.9	79.2	142	139	137		
Moisture Content																		
Percent Moisture			-	%	46.7	42.8	36.5	37.5	37.8	33.7	34.9	23.9	27.5	30.8	38.5	27.8		

**Table 2. Supplemental Site Assessment Sample Summary
 White Park, Parcel A - Southside Trail
 VRP# 22015
 Morgantown, Monongalia County, West Virginia**

Sample Identification	Media	Area of Potential Concern	Reason for Assessment
SPLP-01	SPLP Lechate	Within former AST location T-40; southwest of proposed trail	Migration to groundwater potential
SPLP-02	SPLP Lechate	Within former AST location T-39; and along proposed trail	Migration to groundwater potential
SPLP-03	SPLP Lechate	Within former AST location T-43; and along proposed trail in the "peninsula"	Migration to groundwater potential
SPLP-04	SPLP Lechate	Within between former AST locations T-36 and T-37	Migration to groundwater potential
SPLP-05	SPLP Lechate	Downgradient of former AST location T-56	Migration to groundwater potential
SS-01-121422 (0-2)	Surface Soil	Proposed Skills Area	Current soil conditions
SS-02-121422 (0-2)	Surface Soil	Proposed Skills Area	Current soil conditions
SS-03-121422 (0-2)	Surface Soil	Proposed Skills Area	Current soil conditions
SS-04-121422 (0-2)	Surface Soil	Within proposed crossover trail, near confluence of former AST locations T-37, T-38 and T-43	Current soil conditions

Table 3. Supplemental Site Assessment Analytical Summary
White Park, Parcel A - Southside Trail
VRP# 22015
Morgantown, Monongalia County, West Virginia

Environmental Media and Sample Identification	SPLP Leachate PAHs	SPLP Leachate RCRA Metals	RCRA Metals	PAHs	Sample Type
	SPLP Soil Samples				
Subsurface Soil (>2' bgs)					
SPLP-01	1	1	--	--	Grab
SPLP-02	1	1	--	--	Grab
SPLP-03	1	1	--	--	Grab
SPLP-04	1	1	--	--	Grab
SPLP-05	1	1	--	--	Grab
Surface Soil Samples					
Surface Soil samples (0-2' bgs)					
SS-01	--	--	1	1	Grab
SS-02	--	--	1	1	Grab
SS-03	--	--	1	1	Grab
SS-04	--	--	1	1	Grab
Total Soil Samples	5	5	4	4	

Note:

PAHs = polycyclic aromatic hydrocarbons

RCRA =Resource Conservation and Recovery Act

SPLP = Synthetic Precipitation Leaching Procedure

Table 4. 2022 SAR Surface Soil Data
White Park, Parcel A - Southside Trail
VRP# 22015
Morgantown, Monongalia County, West Virginia

Analyte Name	Industrial Soil <i>de minimis</i> RBC	Residential Soil <i>de minimis</i> RBC	Recreator Trail User RSL		SS-01-121422 (0-2)	SS-02-121422 (0-2)	SS-03-121422 (0-2)	SS-03-121422 - DUP (0-2)	SS-04-121422 (0-2)
				Date:	12/14/2022	12/14/2022	12/14/2022	12/14/2022	12/14/2022
				Units	Proposed Skills Area	Proposed Skills Area	Proposed Skills Area	Proposed Skills Area	Crossover Trail
RCRA Metals									
Arsenic**	30	13.1	13.1	mg/kg	8.9	13	13	17	7.4
Barium	220000	15000	47900	mg/kg	130	150	140	130	83
Cadmium	530	37	21.9	mg/kg	0.077 J	0.43	0.17	0.21	0.099 J
Chromium	1000000	120000	120000	mg/kg	24	29	32	29	18
Lead (RBCr)	800	400	400	mg/kg	18	53	110	100	17
Mercury	3.1	3.1	400	mg/kg	0.062 J	0.098	0.11	0.085	0.052 J
Selenium	5800	390	1200	mg/kg	0.34 J	0.34 J	0.43 J	0.37 J	0.47
Silver	5800	390	1200	mg/kg	<0.044	<0.044	<0.060	<0.045	<0.044
PAHs									
Acenaphthene	47000000	4100000	11000000	ug/kg	<0.83	21	5.9	41	17
Acenaphthylene (RBCr)	51000000	4200000	4200000	ug/kg	<0.42	1.7 J	1.1 J	1.7 J	11
Anthracene	350000000	23000000	55100000	ug/kg	<0.83	48	16	160	120
Benzo[a]anthracene	320000	1500	3520	ug/kg	<0.83	76	40	240	390
Benzo[a]pyrene	21000	110	353	ug/kg	<0.83	58	35	190	400
Benzo[b]fluoranthene	210000	1100	3530	ug/kg	0.87 J	70	44	210	620
Benzo[g,h,i]perylene (RBCr)	23000000	1800000	1800000	ug/kg	0.89 J	29	22	91	340
Benzo[k]fluoranthene	2100000	11000	35300	ug/kg	<0.83	27	16	94	200
Chrysene	21000000	110000	353000	ug/kg	0.51	70	39	200	350
Dibenz[a,h]anthracene	21000	110	353	ug/kg	<0.83	9.7	7.4	34	84
Fluoranthene	30000000	2400000	7340000	ug/kg	<0.83	150	76	600	1100
Fluorene	37000000	2900000	7340000	ug/kg	<0.83	23	5.7	30	26
Indeno[1,2,3-cd]pyrene	210000	1100	3530	ug/kg	0.84 J	45	32	140	440
Naphthalene	110000	2400	11900	ug/kg	<1.7	38	10	3.6 J	7.1
Phenanthrene (RBCr)	350000000	23000000	23000000	ug/kg	<1.2	150	55	370	300
Pyrene	34000000	2300000	5510000	ug/kg	<0.83	120	59	360	750
Moisture Content									
Percent Moisture	--	--	--	%	20.2	25.0	33.0	23.1	26.9

Notes:

de minimis RBC = Risk-based concentration WV VRP residential and industrial soil *de minimis* values (Table 60-9, revised December 2021)

RSL = Regional screening level for a recreator (rail trail user) using USEPA Regional Screening Level (RSL) generator on Feb 13, 2022 for HQ=1, Cancer Risk 1x10⁻⁶, EF=250 days/yr, ET=4.0 hr/day.

RBCr = In the absence of a recreator RSL, the residential soil risk-based concentration (RBC) is used, as defined in the West Virginia Voluntary Remediation and Redevelopment Act Table 60-9 De Minimis, December 2021.

**Arsenic soil RSL is the maximum published background concentration (VRP Guidance Manual, Table 3-3: Background Concentrations of Elements in WV Soils).

RCRA =Resource Conservation and Recovery Act

PAHs = polycyclic aromatic hydrocarbons

< - Indicates analyte was not detected above Laboratory Method Detection Limit

J - indicates estimated result. The results is between the detection limit and the reporting limit.

" --" - No standard available

mg/kg - milligrams per kilogram

ug/kg - micrograms per kilogram

Highlighted and bold results - Result is above the standard.

**Table 5. 2022 SSAR SPLP Data - Groundwater Impact Determinant
White Park, Parcel A - Southside Trail
VRP# 22015
Morgantown, Monongalia County, West Virginia**

Analyte Name	Groundwater RBC	VISL Commercial RBC	VISL Residential RBC		SPLP-1 (10-13.5)	SPLP-1-DUP (10-13.5)	SPLP-2 (10-15)	SPLP-3 (0.5-1)	SPLP-4 (3-4)	SPLP-5 (5-9.5)
				Date:	12/14/2022	12/14/2022	12/14/2022	12/14/2022	12/14/2022	12/14/2022
				Units	AST T-40	AST T-40	AST T-39	AST T-43	between ASTs T-36 and T-37	downgradient of AST T-56
RCRA Metals										
Arsenic	10	--	--	ug/L	<6.8	<6.8	<6.8	<6.8	<6.8	<6.8
Barium	2000	--	--	ug/L	13 J	8.2 J	14 J	29	15 J	73
Cadmium	5	--	--	ug/L	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Chromium	22000	--	--	ug/L	<3.3	<3.3	<3.3	<3.3	<3.3	<3.3
Lead	15	--	--	ug/L	<0.71	<0.71	<0.71	8	<0.71	<0.71
Mercury	2	10.6	2.52	ug/L	<0.079	<0.079	<0.079 UJ	<0.079	<0.079	<0.079
Selenium	50	--	--	ug/L	<2.8	<2.8	<2.8	<2.8	<2.8	<2.8
Silver	94	--	--	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Zinc	6000	--	--	ug/L	<40	<40	<40	<40	<40	<40
PAHs										
Acenaphthene	240	--	--	ug/L	0.055	0.023	0.011 J	0.020 J	0.061 J	0.046 J
Acenaphthylene	240	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Anthracene	1800	--	--	ug/L	0.031 J	0.031 J	<0.011	<0.017	<0.011	<0.014
Benzo[a]anthracene	0.03	--	176	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Benzo[a]pyrene	0.2	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Benzo[b]fluoranthene	0.25	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Benzo[g,h,i]perylene	600	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Benzo[k]fluoranthene	2.5	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Chrysene	25	--	--	ug/L	<0.011	<0.011	<0.011	<0.017	<0.011	<0.014
Dibenz[a,h]anthracene	0.025	--	--	ug/L	<0.022	<0.022	<0.023	<0.035	<0.021	<0.028
Fluoranthene	800	--	--	ug/L	0.051 J	<0.011	<0.011	<0.017	<0.011	<0.014
Fluorene	150	--	--	ug/L	0.17 B	0.044 J B	0.059 B	0.056 J B	0.058 B	0.20 B
Indeno[1,2,3-cd]pyrene	0.25	--	--	ug/L	<0.022	<0.023	<0.023	<0.035	<0.021	<0.028
Naphthalene	0.12	477	10.9	ug/L	0.34 B	<0.034	0.11 B	0.18 B	0.11 B	<0.042
Phenanthrene	1700	--	--	ug/L	0.44 B	<0.034	<0.034	<0.052	<0.032	<0.042
Pyrene	79	--	--	ug/L	0.026 J B	<0.011	0.012 J B	<0.017	<0.011	<0.014

Notes:

Groundwater RBC = WV groundwater de minimis standard as defined in the West Virginia Voluntary Remediation and Redevelopment Act Table 60-9 De Minimis, December 2021.

USEPA Vapor Intrusion Screening Level (VISL) derived on September 19, 2022. Hazard quotient not to exceed 1.0, Cumulative cancer risk of 1x10-6 (resident) and 1x10-5 (commercial), temperature of 13 degrees Celsius.

RCRA = Resource Conservation and Recovery Act

PAHs = polycyclic aromatic hydrocarbons

< - Indicates analyte was not detected above Laboratory Method Detection Limit

" ---" - No standard available

mg/kg - milligrams per kilogram

ug/kg - micrograms per kilogram

Highlighted and bold results - Result is above the standard.

B = Compound was found in the blank and sample.

J = Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

APPENDIX A
LABORATORY ANALYTICAL RESULTS



 **ANALYTICAL REPORT****PREPARED FOR**

Attn: Kelsey Morton
Environmental Standards Inc.
1140 Valley Forge Road
PO BOX 810
Valley Forge, Pennsylvania 19482-0810

Generated 1/4/2023 11:02:55 AM

JOB DESCRIPTION

White Park

JOB NUMBER

410-109325-1

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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1/4/2023 11:02:55 AM

Authorized for release by
Barbara Weyandt, Project Manager
Barbara.Weyandt@et.eurofinsus.com
(717)556-7264

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

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Barb Weyandt



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Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
cn	Refer to Case Narrative for further detail
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F3	Duplicate RPD exceeds the control limit
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Job ID: 410-109325-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

**Job Narrative
410-109325-1**

Receipt

The samples were received on 12/15/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

GC/MS Semi VOA

Method 8270E_SIM: The laboratory control sample (LCS) for preparation batch 410-330329 and analytical batch 410-330643 recovered outside control limits for the following analytes: Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[k]fluoranthene, Chrysene, Fluoranthene and Phenanthrene. The associated sample(s) was re-prepared and/or re-analyzed within holding time but LCS associated with the re-extracted sample recovered outside control limits again. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Detection Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzo[b]fluoranthene	0.87	J	2.1	0.83	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[g,h,i]perylene	0.89	J	2.1	0.83	ug/Kg	1	✳	8270E SIM	Total/NA
Chrysene	0.51	J *- F1 cn	2.1	0.42	ug/Kg	1	✳	8270E SIM	Total/NA
Indeno[1,2,3-cd]pyrene	0.84	J	2.1	0.83	ug/Kg	1	✳	8270E SIM	Total/NA
Arsenic	8.9		0.44	0.15	mg/Kg	2	✳	6020B	Total/NA
Barium	130	F1	0.44	0.20	mg/Kg	2	✳	6020B	Total/NA
Cadmium	0.077	J	0.11	0.044	mg/Kg	2	✳	6020B	Total/NA
Chromium	24		0.44	0.17	mg/Kg	2	✳	6020B	Total/NA
Lead	18	F1	0.22	0.083	mg/Kg	2	✳	6020B	Total/NA
Selenium	0.34	J	0.44	0.11	mg/Kg	2	✳	6020B	Total/NA
Mercury	0.062	J	0.072	0.024	mg/Kg	1	✳	7471B	Total/NA

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	21		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Acenaphthylene	1.7	J *- cn	2.2	0.44	ug/Kg	1	✳	8270E SIM	Total/NA
Anthracene	48	*- cn	2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]anthracene	76	*- cn	2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]pyrene	58	*- cn	2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[b]fluoranthene	70		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[g,h,i]perylene	29		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[k]fluoranthene	27	*- cn	2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Chrysene	70	*- cn	2.2	0.44	ug/Kg	1	✳	8270E SIM	Total/NA
Dibenz(a,h)anthracene	9.7		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Fluoranthene	150	*- cn	2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Fluorene	23		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Indeno[1,2,3-cd]pyrene	45		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Naphthalene	38		4.4	1.8	ug/Kg	1	✳	8270E SIM	Total/NA
Phenanthrene	150	*- cn	3.1	1.3	ug/Kg	1	✳	8270E SIM	Total/NA
Pyrene	120		2.2	0.88	ug/Kg	1	✳	8270E SIM	Total/NA
Arsenic	13		0.43	0.14	mg/Kg	2	✳	6020B	Total/NA
Barium	150		0.43	0.20	mg/Kg	2	✳	6020B	Total/NA
Cadmium	0.43		0.11	0.043	mg/Kg	2	✳	6020B	Total/NA
Chromium	29		0.43	0.17	mg/Kg	2	✳	6020B	Total/NA
Lead	53		0.22	0.082	mg/Kg	2	✳	6020B	Total/NA
Selenium	0.34	J	0.43	0.11	mg/Kg	2	✳	6020B	Total/NA
Mercury	0.098		0.074	0.025	mg/Kg	1	✳	7471B	Total/NA

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	5.9		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Acenaphthylene	1.1	J *- cn	2.5	0.49	ug/Kg	1	✳	8270E SIM	Total/NA
Anthracene	16	*- cn	2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]anthracene	40	*- cn	2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]pyrene	35	*- cn	2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[b]fluoranthene	44		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[g,h,i]perylene	22		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[k]fluoranthene	16	*- cn	2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Chrysene	39	*- cn	2.5	0.49	ug/Kg	1	✳	8270E SIM	Total/NA
Dibenz(a,h)anthracene	7.4		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422 (Continued)

Lab Sample ID: 410-109325-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	76	*- cn	2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Fluorene	5.7		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Indeno[1,2,3-cd]pyrene	32		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Naphthalene	10		4.9	2.0	ug/Kg	1	✳	8270E SIM	Total/NA
Phenanthrene	55	*- cn	3.4	1.5	ug/Kg	1	✳	8270E SIM	Total/NA
Pyrene	59		2.5	0.98	ug/Kg	1	✳	8270E SIM	Total/NA
Arsenic	13		0.59	0.20	mg/Kg	2	✳	6020B	Total/NA
Barium	140		0.59	0.27	mg/Kg	2	✳	6020B	Total/NA
Cadmium	0.17		0.15	0.059	mg/Kg	2	✳	6020B	Total/NA
Chromium	32		0.59	0.23	mg/Kg	2	✳	6020B	Total/NA
Lead	110		0.30	0.11	mg/Kg	2	✳	6020B	Total/NA
Selenium	0.43	J	0.59	0.15	mg/Kg	2	✳	6020B	Total/NA
Mercury	0.11		0.084	0.028	mg/Kg	1	✳	7471B	Total/NA

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	17		2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Acenaphthylene	11	*- cn	2.3	0.45	ug/Kg	1	✳	8270E SIM	Total/NA
Anthracene	120	*- cn	2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]anthracene	390	*- cn	2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]pyrene	400	*- cn	2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[g,h,i]perylene	340		2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[k]fluoranthene	200	*- cn	2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Chrysene	350	*- cn	2.3	0.45	ug/Kg	1	✳	8270E SIM	Total/NA
Dibenz(a,h)anthracene	84		2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Fluorene	26		2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Indeno[1,2,3-cd]pyrene	440		2.3	0.91	ug/Kg	1	✳	8270E SIM	Total/NA
Naphthalene	7.1		4.5	1.8	ug/Kg	1	✳	8270E SIM	Total/NA
Phenanthrene	300	*- cn	3.2	1.4	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[b]fluoranthene - DL	620		23	9.1	ug/Kg	10	✳	8270E SIM	Total/NA
Fluoranthene - DL	1100	*-	23	9.1	ug/Kg	10	✳	8270E SIM	Total/NA
Pyrene - DL	750		23	9.1	ug/Kg	10	✳	8270E SIM	Total/NA
Arsenic	7.4		0.44	0.15	mg/Kg	2	✳	6020B	Total/NA
Barium	83		0.44	0.20	mg/Kg	2	✳	6020B	Total/NA
Cadmium	0.099	J	0.11	0.044	mg/Kg	2	✳	6020B	Total/NA
Chromium	18		0.44	0.17	mg/Kg	2	✳	6020B	Total/NA
Lead	17		0.22	0.083	mg/Kg	2	✳	6020B	Total/NA
Selenium	0.47		0.44	0.11	mg/Kg	2	✳	6020B	Total/NA
Mercury	0.052	J	0.076	0.025	mg/Kg	1	✳	7471B	Total/NA

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	41		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Acenaphthylene	1.7	J *- cn	2.1	0.43	ug/Kg	1	✳	8270E SIM	Total/NA
Anthracene	160	*- cn	2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]anthracene	240	*- cn	2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[a]pyrene	190	*- cn	2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[b]fluoranthene	210		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[g,h,i]perylene	91		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Benzo[k]fluoranthene	94	*- cn	2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Detection Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422-DUP (Continued)

Lab Sample ID: 410-109325-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chrysene	200	*- cn	2.1	0.43	ug/Kg	1	✳	8270E SIM	Total/NA
Dibenz(a,h)anthracene	34		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Fluorene	30		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Indeno[1,2,3-cd]pyrene	140		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Naphthalene	3.6	J	4.3	1.7	ug/Kg	1	✳	8270E SIM	Total/NA
Phenanthrene	370	*- cn	3.0	1.3	ug/Kg	1	✳	8270E SIM	Total/NA
Pyrene	360		2.1	0.86	ug/Kg	1	✳	8270E SIM	Total/NA
Fluoranthene - DL	600	*-	21	8.6	ug/Kg	10	✳	8270E SIM	Total/NA
Arsenic	17		0.44	0.15	mg/Kg	2	✳	6020B	Total/NA
Barium	130		0.44	0.20	mg/Kg	2	✳	6020B	Total/NA
Cadmium	0.21		0.11	0.044	mg/Kg	2	✳	6020B	Total/NA
Chromium	29		0.44	0.17	mg/Kg	2	✳	6020B	Total/NA
Lead	100		0.22	0.084	mg/Kg	2	✳	6020B	Total/NA
Selenium	0.37	J	0.44	0.11	mg/Kg	2	✳	6020B	Total/NA
Mercury	0.085		0.078	0.026	mg/Kg	1	✳	7471B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Date Collected: 12/14/22 11:05

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 79.8

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	F1	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Acenaphthylene	ND	*- F1 cn	2.1	0.42	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Anthracene	ND	*- F1 cn	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Benzo[a]anthracene	ND	*- F1 cn	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Benzo[a]pyrene	ND	*- F1 cn	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Benzo[b]fluoranthene	0.87	J	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Benzo[g,h,i]perylene	0.89	J	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Benzo[k]fluoranthene	ND	*- F1 cn	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Chrysene	0.51	J *- F1 cn	2.1	0.42	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Dibenz(a,h)anthracene	ND		2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Fluoranthene	ND	*- cn	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Fluorene	ND	F1	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Indeno[1,2,3-cd]pyrene	0.84	J	2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Naphthalene	ND		4.2	1.7	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Phenanthrene	ND	*- F1 cn	2.9	1.2	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Pyrene	ND		2.1	0.83	ug/Kg	✱	12/27/22 09:42	12/28/22 06:55	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	55		22 - 152				12/27/22 09:42	12/28/22 06:55	1
Benzo(a)pyrene-d12 (Surr)	54		19 - 133				12/27/22 09:42	12/28/22 06:55	1
1-Methylnaphthalene-d10 (Surr)	53		26 - 123				12/27/22 09:42	12/28/22 06:55	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.9		0.44	0.15	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Barium	130	F1	0.44	0.20	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Cadmium	0.077	J	0.11	0.044	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Chromium	24		0.44	0.17	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Lead	18	F1	0.22	0.083	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Selenium	0.34	J	0.44	0.11	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2
Silver	ND		0.11	0.044	mg/Kg	✱	12/19/22 03:49	12/30/22 19:48	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.062	J	0.072	0.024	mg/Kg	✱	12/17/22 14:10	12/19/22 17:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	20.2		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 75.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	21		2.2	0.88	ug/Kg	✱	12/27/22 09:42	12/28/22 08:06	1
Acenaphthylene	1.7	J *- cn	2.2	0.44	ug/Kg	✱	12/27/22 09:42	12/28/22 08:06	1
Anthracene	48	*- cn	2.2	0.88	ug/Kg	✱	12/27/22 09:42	12/28/22 08:06	1
Benzo[a]anthracene	76	*- cn	2.2	0.88	ug/Kg	✱	12/27/22 09:42	12/28/22 08:06	1
Benzo[a]pyrene	58	*- cn	2.2	0.88	ug/Kg	✱	12/27/22 09:42	12/28/22 08:06	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 75.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	70		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[g,h,i]perylene	29		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[k]fluoranthene	27	*- cn	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Chrysene	70	*- cn	2.2	0.44	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Dibenz(a,h)anthracene	9.7		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Fluoranthene	150	*- cn	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Fluorene	23		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Indeno[1,2,3-cd]pyrene	45		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Naphthalene	38		4.4	1.8	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Phenanthrene	150	*- cn	3.1	1.3	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Pyrene	120		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	58		22 - 152				12/27/22 09:42	12/28/22 08:06	1
Benzo(a)pyrene-d12 (Surr)	57		19 - 133				12/27/22 09:42	12/28/22 08:06	1
1-Methylnaphthalene-d10 (Surr)	57		26 - 123				12/27/22 09:42	12/28/22 08:06	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		0.43	0.14	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Barium	150		0.43	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Cadmium	0.43		0.11	0.043	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Chromium	29		0.43	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Lead	53		0.22	0.082	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Selenium	0.34	J	0.43	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Silver	ND		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.098		0.074	0.025	mg/Kg	☼	12/17/22 14:10	12/19/22 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	25.0		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 67.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	5.9		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Acenaphthylene	1.1	J *- cn	2.5	0.49	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Anthracene	16	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[a]anthracene	40	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[a]pyrene	35	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[b]fluoranthene	44		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[g,h,i]perylene	22		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[k]fluoranthene	16	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Chrysene	39	*- cn	2.5	0.49	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Dibenz(a,h)anthracene	7.4		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 67.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	76	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Fluorene	5.7		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Indeno[1,2,3-cd]pyrene	32		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Naphthalene	10		4.9	2.0	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Phenanthrene	55	*- cn	3.4	1.5	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Pyrene	59		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	55		22 - 152	12/27/22 09:42	12/28/22 08:29	1
Benzo(a)pyrene-d12 (Surr)	52		19 - 133	12/27/22 09:42	12/28/22 08:29	1
1-Methylnaphthalene-d10 (Surr)	54		26 - 123	12/27/22 09:42	12/28/22 08:29	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		0.59	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Barium	140		0.59	0.27	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Cadmium	0.17		0.15	0.059	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Chromium	32		0.59	0.23	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Lead	110		0.30	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Selenium	0.43	J	0.59	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Silver	ND		0.15	0.060	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11		0.084	0.028	mg/Kg	☼	12/17/22 14:10	12/19/22 17:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	33.0		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 73.1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	17		2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Acenaphthylene	11	*- cn	2.3	0.45	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Anthracene	120	*- cn	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[a]anthracene	390	*- cn	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[a]pyrene	400	*- cn	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[g,h,i]perylene	340		2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[k]fluoranthene	200	*- cn	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Chrysene	350	*- cn	2.3	0.45	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Dibenz(a,h)anthracene	84		2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Fluorene	26		2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Indeno[1,2,3-cd]pyrene	440		2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Naphthalene	7.1		4.5	1.8	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Phenanthrene	300	*- cn	3.2	1.4	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 73.1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	64		22 - 152	12/27/22 09:42	12/28/22 08:53	1
Benzo(a)pyrene-d12 (Surr)	64		19 - 133	12/27/22 09:42	12/28/22 08:53	1
1-Methylnaphthalene-d10 (Surr)	61		26 - 123	12/27/22 09:42	12/28/22 08:53	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	620		23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10
Fluoranthene	1100	*-	23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10
Pyrene	750		23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	75		22 - 152	12/27/22 09:42	12/28/22 12:01	10
Benzo(a)pyrene-d12 (Surr)	74		19 - 133	12/27/22 09:42	12/28/22 12:01	10
1-Methylnaphthalene-d10 (Surr)	73		26 - 123	12/27/22 09:42	12/28/22 12:01	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.4		0.44	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Barium	83		0.44	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Cadmium	0.099	J	0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Chromium	18		0.44	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Lead	17		0.22	0.083	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Selenium	0.47		0.44	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Silver	ND		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.052	J	0.076	0.025	mg/Kg	☼	12/17/22 14:10	12/19/22 17:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	26.9		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 76.9

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	41		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Acenaphthylene	1.7	J * - cn	2.1	0.43	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Anthracene	160	* - cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[a]anthracene	240	* - cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[a]pyrene	190	* - cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[b]fluoranthene	210		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[g,h,i]perylene	91		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[k]fluoranthene	94	* - cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Chrysene	200	* - cn	2.1	0.43	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Dibenz(a,h)anthracene	34		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Fluorene	30		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Indeno[1,2,3-cd]pyrene	140		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Naphthalene	3.6	J	4.3	1.7	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 76.9

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenanthrene	370	*- cn	3.0	1.3	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Pyrene	360		2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	58		22 - 152				12/27/22 09:42	12/28/22 09:16	1
Benzo(a)pyrene-d12 (Surr)	54		19 - 133				12/27/22 09:42	12/28/22 09:16	1
1-Methylnaphthalene-d10 (Surr)	52		26 - 123				12/27/22 09:42	12/28/22 09:16	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	600	*-	21	8.6	ug/Kg	☼	12/27/22 09:42	12/28/22 12:25	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	70		22 - 152				12/27/22 09:42	12/28/22 12:25	10
Benzo(a)pyrene-d12 (Surr)	68		19 - 133				12/27/22 09:42	12/28/22 12:25	10
1-Methylnaphthalene-d10 (Surr)	65		26 - 123				12/27/22 09:42	12/28/22 12:25	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	17		0.44	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Barium	130		0.44	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Cadmium	0.21		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Chromium	29		0.44	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Lead	100		0.22	0.084	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Selenium	0.37	J	0.44	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Silver	ND		0.11	0.045	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.085		0.078	0.026	mg/Kg	☼	12/17/22 14:10	12/19/22 17:31	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	23.1		1.0	1.0	%			12/17/22 09:07	1

Surrogate Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FLN10 (22-152)	BAPd12 (19-133)	MNPd10 (26-123)
410-109325-1	SS-01-121422	55	54	53
410-109325-1 MS	SS-01-MS	56	55	53
410-109325-1 MSD	SS-01-MSD	59	57	58
410-109325-2	SS-02-121422	58	57	57
410-109325-3	SS-03-121422	55	52	54
410-109325-4	SS-04-121422	64	64	61
410-109325-4 - DL	SS-04-121422	75	74	73
410-109325-5	SS-03-121422-DUP	58	54	52
410-109325-5 - DL	SS-03-121422-DUP	70	68	65
LCS 410-330329/2-A	Lab Control Sample	61	65	58
MB 410-330329/1-A	Method Blank	64	68	66

Surrogate Legend

FLN10 = Fluoranthene-d10 (Surr)

BAPd12 = Benzo(a)pyrene-d12 (Surr)

MNPd10 = 1-Methylnaphthalene-d10 (Surr)

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-330329/1-A

Matrix: Solid

Analysis Batch: 330643

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 330329

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Acenaphthylene	ND		1.7	0.33	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Anthracene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Benzo[a]anthracene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Benzo[a]pyrene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Benzo[b]fluoranthene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Benzo[g,h,i]perylene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Benzo[k]fluoranthene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Chrysene	ND		1.7	0.33	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Dibenz(a,h)anthracene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Fluoranthene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Fluorene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Indeno[1,2,3-cd]pyrene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Naphthalene	ND		3.3	1.3	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Phenanthrene	ND		2.3	1.0	ug/Kg		12/27/22 09:42	12/28/22 06:08	1
Pyrene	ND		1.7	0.67	ug/Kg		12/27/22 09:42	12/28/22 06:08	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Fluoranthene-d10 (Surr)	64		22 - 152	12/27/22 09:42	12/28/22 06:08	1
Benzo(a)pyrene-d12 (Surr)	68		19 - 133	12/27/22 09:42	12/28/22 06:08	1
1-Methylnaphthalene-d10 (Surr)	66		26 - 123	12/27/22 09:42	12/28/22 06:08	1

Lab Sample ID: LCS 410-330329/2-A

Matrix: Solid

Analysis Batch: 330643

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 330329

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Acenaphthene	33.3	19.6		ug/Kg		59	56 - 120
Acenaphthylene	33.3	19.2	*-	ug/Kg		58	62 - 112
Anthracene	33.3	21.5	*-	ug/Kg		65	66 - 115
Benzo[a]anthracene	33.3	21.0	*-	ug/Kg		63	66 - 121
Benzo[a]pyrene	33.3	20.8	*-	ug/Kg		62	73 - 118
Benzo[b]fluoranthene	33.3	21.8		ug/Kg		65	60 - 129
Benzo[g,h,i]perylene	33.3	25.5		ug/Kg		77	56 - 131
Benzo[k]fluoranthene	33.3	20.9	*-	ug/Kg		63	67 - 129
Chrysene	33.3	20.5	*-	ug/Kg		62	66 - 120
Dibenz(a,h)anthracene	33.3	26.3		ug/Kg		79	55 - 130
Fluoranthene	33.3	21.0	*-	ug/Kg		63	65 - 124
Fluorene	33.3	20.9		ug/Kg		63	62 - 120
Indeno[1,2,3-cd]pyrene	33.3	27.1		ug/Kg		81	57 - 145
Naphthalene	33.3	19.0		ug/Kg		57	42 - 120
Phenanthrene	33.3	21.6	*-	ug/Kg		65	67 - 111
Pyrene	33.3	20.3		ug/Kg		61	59 - 120

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Fluoranthene-d10 (Surr)	61		22 - 152
Benzo(a)pyrene-d12 (Surr)	65		19 - 133
1-Methylnaphthalene-d10 (Surr)	58		26 - 123

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: 410-109325-1 MS

Matrix: Solid

Analysis Batch: 330643

Client Sample ID: SS-01-MS

Prep Type: Total/NA

Prep Batch: 330329

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
Acenaphthene	ND	F1	41.6	22.6	F1	ug/Kg	☼	54	56 - 120	
Acenaphthylene	ND	*- F1 cn	41.6	22.0	F1	ug/Kg	☼	53	62 - 112	
Anthracene	ND	*- F1 cn	41.6	25.1	F1	ug/Kg	☼	60	66 - 115	
Benzo[a]anthracene	ND	*- F1 cn	41.6	27.2	F1	ug/Kg	☼	65	66 - 121	
Benzo[a]pyrene	ND	*- F1 cn	41.6	25.0	F1	ug/Kg	☼	60	73 - 118	
Benzo[b]fluoranthene	0.87	J	41.6	27.4		ug/Kg	☼	64	60 - 129	
Benzo[g,h,i]perylene	0.89	J	41.6	29.3		ug/Kg	☼	68	56 - 131	
Benzo[k]fluoranthene	ND	*- F1 cn	41.6	24.0	F1	ug/Kg	☼	58	67 - 129	
Chrysene	0.51	J *- F1 cn	41.6	25.6	F1	ug/Kg	☼	60	66 - 120	
Dibenz(a,h)anthracene	ND		41.6	28.5		ug/Kg	☼	68	55 - 130	
Fluoranthene	ND	*- cn	41.6	29.2		ug/Kg	☼	70	65 - 124	
Fluorene	ND	F1	41.6	23.9	F1	ug/Kg	☼	57	62 - 120	
Indeno[1,2,3-cd]pyrene	0.84	J	41.6	31.5		ug/Kg	☼	74	57 - 145	
Naphthalene	ND		41.6	23.6		ug/Kg	☼	57	42 - 120	
Phenanthrene	ND	*- F1 cn	41.6	27.5	F1	ug/Kg	☼	66	67 - 111	
Pyrene	ND		41.6	27.8		ug/Kg	☼	67	59 - 120	

Surrogate	MS %Recovery	MS Qualifier	Limits
Fluoranthene-d10 (Surr)	56		22 - 152
Benzo(a)pyrene-d12 (Surr)	55		19 - 133
1-Methylnaphthalene-d10 (Surr)	53		26 - 123

Lab Sample ID: 410-109325-1 MSD

Matrix: Solid

Analysis Batch: 330643

Client Sample ID: SS-01-MSD

Prep Type: Total/NA

Prep Batch: 330329

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
Acenaphthene	ND	F1	41.5	23.6		ug/Kg	☼	57	56 - 120	4	30	
Acenaphthylene	ND	*- F1 cn	41.5	22.9	F1	ug/Kg	☼	55	62 - 112	4	30	
Anthracene	ND	*- F1 cn	41.5	26.4	F1	ug/Kg	☼	64	66 - 115	5	30	
Benzo[a]anthracene	ND	*- F1 cn	41.5	27.2		ug/Kg	☼	66	66 - 121	0	30	
Benzo[a]pyrene	ND	*- F1 cn	41.5	24.6	F1	ug/Kg	☼	59	73 - 118	2	30	
Benzo[b]fluoranthene	0.87	J	41.5	27.1		ug/Kg	☼	63	60 - 129	1	30	
Benzo[g,h,i]perylene	0.89	J	41.5	29.8		ug/Kg	☼	70	56 - 131	2	30	
Benzo[k]fluoranthene	ND	*- F1 cn	41.5	24.6	F1	ug/Kg	☼	59	67 - 129	2	30	
Chrysene	0.51	J *- F1 cn	41.5	25.5	F1	ug/Kg	☼	60	66 - 120	0	30	
Dibenz(a,h)anthracene	ND		41.5	29.9		ug/Kg	☼	72	55 - 130	5	30	
Fluoranthene	ND	*- cn	41.5	29.0		ug/Kg	☼	70	65 - 124	1	30	
Fluorene	ND	F1	41.5	24.9	F1	ug/Kg	☼	60	62 - 120	4	30	
Indeno[1,2,3-cd]pyrene	0.84	J	41.5	32.7		ug/Kg	☼	77	57 - 145	4	30	
Naphthalene	ND		41.5	25.6		ug/Kg	☼	62	42 - 120	8	30	
Phenanthrene	ND	*- F1 cn	41.5	27.6	F1	ug/Kg	☼	66	67 - 111	0	30	
Pyrene	ND		41.5	26.8		ug/Kg	☼	65	59 - 120	4	30	

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Fluoranthene-d10 (Surr)	59		22 - 152
Benzo(a)pyrene-d12 (Surr)	57		19 - 133
1-Methylnaphthalene-d10 (Surr)	58		26 - 123

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 410-328341/1-A ^2
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328341

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		0.40	0.13	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Barium	ND		0.40	0.18	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Cadmium	ND		0.10	0.040	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Chromium	ND		0.40	0.15	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Lead	ND		0.20	0.076	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Selenium	ND		0.40	0.10	mg/Kg		12/19/22 03:49	12/30/22 19:28	2
Silver	ND		0.10	0.041	mg/Kg		12/19/22 03:49	12/30/22 19:28	2

Lab Sample ID: LCS 410-328341/2-A ^2
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328341

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	50.0	50.4		mg/Kg		101	80 - 120
Cadmium	5.00	4.90		mg/Kg		98	80 - 120
Chromium	50.0	49.7		mg/Kg		99	80 - 120
Lead	5.00	4.99		mg/Kg		100	80 - 120
Selenium	10.0	9.94		mg/Kg		99	80 - 120
Silver	5.00	4.86		mg/Kg		97	80 - 120

Lab Sample ID: 410-109325-1 MS
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SS-01-MS
Prep Type: Total/NA
Prep Batch: 328341

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Arsenic	8.9		48.6	53.5		mg/Kg	✱	92	75 - 125
Barium	130	F1	48.6	195	E F1	mg/Kg	✱	135	75 - 125
Cadmium	0.077	J	4.86	4.91		mg/Kg	✱	99	75 - 125
Chromium	24		48.6	73.6		mg/Kg	✱	103	75 - 125
Lead	18	F1	4.86	27.1	F1	mg/Kg	✱	187	75 - 125
Selenium	0.34	J	9.71	10.5		mg/Kg	✱	104	75 - 125
Silver	ND		4.86	4.88		mg/Kg	✱	101	75 - 125

Lab Sample ID: 410-109325-1 MSD
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SS-01-MSD
Prep Type: Total/NA
Prep Batch: 328341

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
	Result	Qualifier		Result	Qualifier						
Arsenic	8.9		45.1	51.1		mg/Kg	✱	94	75 - 125	5	20
Barium	130	F1	45.1	196	E F1	mg/Kg	✱	148	75 - 125	1	20
Cadmium	0.077	J	4.51	4.55		mg/Kg	✱	99	75 - 125	7	20
Chromium	24		45.1	66.9		mg/Kg	✱	96	75 - 125	10	20
Lead	18	F1	4.51	27.9	4	mg/Kg	✱	220	75 - 125	3	20
Selenium	0.34	J	9.01	9.39		mg/Kg	✱	100	75 - 125	11	20
Silver	ND		4.51	4.47		mg/Kg	✱	99	75 - 125	9	20

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 410-109325-1 DU
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SS-01-121422
Prep Type: Total/NA
Prep Batch: 328341

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Arsenic	8.9		13.0	F3	mg/Kg	⊛	38	20
Barium	130	F1	173	F3	mg/Kg	⊛	29	20
Cadmium	0.077	J	0.0761	J	mg/Kg	⊛	1	20
Chromium	24		27.5		mg/Kg	⊛	15	20
Lead	18	F1	27.4	F3	mg/Kg	⊛	41	20
Selenium	0.34	J	1.01	F3	mg/Kg	⊛	100	20
Silver	ND		ND		mg/Kg	⊛	NC	20

Method: 7471B - Mercury (CVAA)

Lab Sample ID: MB 410-328178/1-A
Matrix: Solid
Analysis Batch: 328721

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 328178

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	ND		0.036	0.012	mg/Kg		12/17/22 14:10	12/19/22 16:23	1

Lab Sample ID: LCS 410-328178/2-A
Matrix: Solid
Analysis Batch: 328721

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 328178

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.100	0.107		mg/Kg		107	80 - 120

Lab Sample ID: 410-109325-1 MS
Matrix: Solid
Analysis Batch: 328721

Client Sample ID: SS-01-MS
Prep Type: Total/NA
Prep Batch: 328178

Analyte	Sample	Sample	Spike Added	MS	MS	Unit	D	%Rec	%Rec Limits
	Result	Qualifier		Result	Qualifier				
Mercury	0.062	J	0.199	0.278		mg/Kg	⊛	108	80 - 120

Lab Sample ID: 410-109325-1 MSD
Matrix: Solid
Analysis Batch: 328721

Client Sample ID: SS-01-MSD
Prep Type: Total/NA
Prep Batch: 328178

Analyte	Sample	Sample	Spike Added	MSD	MSD	Unit	D	%Rec	%Rec Limits	RPD	Limit
	Result	Qualifier		Result	Qualifier						
Mercury	0.062	J	0.196	0.279		mg/Kg	⊛	111	80 - 120	1	20

Lab Sample ID: 410-109325-1 DU
Matrix: Solid
Analysis Batch: 328721

Client Sample ID: SS-01-121422
Prep Type: Total/NA
Prep Batch: 328178

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Mercury	0.062	J	0.0680	J	mg/Kg	⊛	10	20

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

GC/MS Semi VOA

Prep Batch: 330329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	3546	
410-109325-2	SS-02-121422	Total/NA	Solid	3546	
410-109325-3	SS-03-121422	Total/NA	Solid	3546	
410-109325-4 - DL	SS-04-121422	Total/NA	Solid	3546	
410-109325-4	SS-04-121422	Total/NA	Solid	3546	
410-109325-5 - DL	SS-03-121422-DUP	Total/NA	Solid	3546	
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	3546	
MB 410-330329/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-330329/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-109325-1 MS	SS-01-MS	Total/NA	Solid	3546	
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	3546	

Analysis Batch: 330643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	8270E SIM	330329
410-109325-2	SS-02-121422	Total/NA	Solid	8270E SIM	330329
410-109325-3	SS-03-121422	Total/NA	Solid	8270E SIM	330329
410-109325-4	SS-04-121422	Total/NA	Solid	8270E SIM	330329
410-109325-4 - DL	SS-04-121422	Total/NA	Solid	8270E SIM	330329
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	8270E SIM	330329
410-109325-5 - DL	SS-03-121422-DUP	Total/NA	Solid	8270E SIM	330329
MB 410-330329/1-A	Method Blank	Total/NA	Solid	8270E SIM	330329
LCS 410-330329/2-A	Lab Control Sample	Total/NA	Solid	8270E SIM	330329
410-109325-1 MS	SS-01-MS	Total/NA	Solid	8270E SIM	330329
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	8270E SIM	330329

Prep Batch: 330911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1 - RE	SS-01-121422	Total/NA	Solid	3546	
410-109325-2 - RE	SS-02-121422	Total/NA	Solid	3546	
410-109325-3 - RE	SS-03-121422	Total/NA	Solid	3546	
410-109325-4 - REDL	SS-04-121422	Total/NA	Solid	3546	
410-109325-4 - RE	SS-04-121422	Total/NA	Solid	3546	
410-109325-5 - RE	SS-03-121422-DUP	Total/NA	Solid	3546	
MB 410-330911/1-A	Method Blank	Total/NA	Solid	3546	
LCS 410-330911/2-A	Lab Control Sample	Total/NA	Solid	3546	
410-109325-1 MS - RE	SS-01-MS	Total/NA	Solid	3546	
410-109325-1 MSD - RE	SS-01-MSD	Total/NA	Solid	3546	

Analysis Batch: 331038

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1 - RE	SS-01-121422	Total/NA	Solid	8270E SIM	330911
410-109325-2 - RE	SS-02-121422	Total/NA	Solid	8270E SIM	330911
410-109325-3 - RE	SS-03-121422	Total/NA	Solid	8270E SIM	330911
410-109325-4 - RE	SS-04-121422	Total/NA	Solid	8270E SIM	330911
410-109325-4 - REDL	SS-04-121422	Total/NA	Solid	8270E SIM	330911
410-109325-5 - RE	SS-03-121422-DUP	Total/NA	Solid	8270E SIM	330911
MB 410-330911/1-A	Method Blank	Total/NA	Solid	8270E SIM	330911
LCS 410-330911/2-A	Lab Control Sample	Total/NA	Solid	8270E SIM	330911
410-109325-1 MS - RE	SS-01-MS	Total/NA	Solid	8270E SIM	330911
410-109325-1 MSD - RE	SS-01-MSD	Total/NA	Solid	8270E SIM	330911

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Metals

Prep Batch: 328178

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	7471B	
410-109325-2	SS-02-121422	Total/NA	Solid	7471B	
410-109325-3	SS-03-121422	Total/NA	Solid	7471B	
410-109325-4	SS-04-121422	Total/NA	Solid	7471B	
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	7471B	
MB 410-328178/1-A	Method Blank	Total/NA	Solid	7471B	
LCS 410-328178/2-A	Lab Control Sample	Total/NA	Solid	7471B	
410-109325-1 MS	SS-01-MS	Total/NA	Solid	7471B	
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	7471B	
410-109325-1 DU	SS-01-121422	Total/NA	Solid	7471B	

Prep Batch: 328341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	3050B	
410-109325-2	SS-02-121422	Total/NA	Solid	3050B	
410-109325-3	SS-03-121422	Total/NA	Solid	3050B	
410-109325-4	SS-04-121422	Total/NA	Solid	3050B	
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	3050B	
MB 410-328341/1-A ^2	Method Blank	Total/NA	Solid	3050B	
LCS 410-328341/2-A ^2	Lab Control Sample	Total/NA	Solid	3050B	
410-109325-1 MS	SS-01-MS	Total/NA	Solid	3050B	
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	3050B	
410-109325-1 DU	SS-01-121422	Total/NA	Solid	3050B	

Analysis Batch: 328721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	7471B	328178
410-109325-2	SS-02-121422	Total/NA	Solid	7471B	328178
410-109325-3	SS-03-121422	Total/NA	Solid	7471B	328178
410-109325-4	SS-04-121422	Total/NA	Solid	7471B	328178
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	7471B	328178
MB 410-328178/1-A	Method Blank	Total/NA	Solid	7471B	328178
LCS 410-328178/2-A	Lab Control Sample	Total/NA	Solid	7471B	328178
410-109325-1 MS	SS-01-MS	Total/NA	Solid	7471B	328178
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	7471B	328178
410-109325-1 DU	SS-01-121422	Total/NA	Solid	7471B	328178

Analysis Batch: 331815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	6020B	328341
410-109325-2	SS-02-121422	Total/NA	Solid	6020B	328341
410-109325-3	SS-03-121422	Total/NA	Solid	6020B	328341
410-109325-4	SS-04-121422	Total/NA	Solid	6020B	328341
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	6020B	328341
MB 410-328341/1-A ^2	Method Blank	Total/NA	Solid	6020B	328341
LCS 410-328341/2-A ^2	Lab Control Sample	Total/NA	Solid	6020B	328341
410-109325-1 MS	SS-01-MS	Total/NA	Solid	6020B	328341
410-109325-1 MSD	SS-01-MSD	Total/NA	Solid	6020B	328341
410-109325-1 DU	SS-01-121422	Total/NA	Solid	6020B	328341

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

General Chemistry

Analysis Batch: 328147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109325-1	SS-01-121422	Total/NA	Solid	Moisture	
410-109325-2	SS-02-121422	Total/NA	Solid	Moisture	
410-109325-3	SS-03-121422	Total/NA	Solid	Moisture	
410-109325-4	SS-04-121422	Total/NA	Solid	Moisture	
410-109325-5	SS-03-121422-DUP	Total/NA	Solid	Moisture	

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Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Date Collected: 12/14/22 11:05

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	328147	UVJN	ELLE	12/17/22 09:07

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Date Collected: 12/14/22 11:05

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 79.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM		1	330643	SJ89	ELLE	12/28/22 06:55
Total/NA	Prep	3546	RE		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	RE	1	331038	UJM0	ELLE	12/29/22 06:36
Total/NA	Prep	3050B			328341	UAMX	ELLE	12/19/22 03:49
Total/NA	Analysis	6020B		2	331815	S4PD	ELLE	12/30/22 19:48
Total/NA	Prep	7471B			328178	UAMX	ELLE	12/17/22 14:10
Total/NA	Analysis	7471B		1	328721	UEFS	ELLE	12/19/22 17:36

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	328147	UVJN	ELLE	12/17/22 09:07

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 75.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM		1	330643	SJ89	ELLE	12/28/22 08:06
Total/NA	Prep	3546	RE		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	RE	1	331038	UJM0	ELLE	12/29/22 07:46
Total/NA	Prep	3050B			328341	UAMX	ELLE	12/19/22 03:49
Total/NA	Analysis	6020B		2	331815	S4PD	ELLE	12/30/22 19:34
Total/NA	Prep	7471B			328178	UAMX	ELLE	12/17/22 14:10
Total/NA	Analysis	7471B		1	328721	UEFS	ELLE	12/19/22 17:25

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	328147	UVJN	ELLE	12/17/22 09:07

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 67.0

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM		1	330643	SJ89	ELLE	12/28/22 08:29
Total/NA	Prep	3546	RE		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	RE	1	331038	UJM0	ELLE	12/29/22 08:10
Total/NA	Prep	3050B			328341	UAMX	ELLE	12/19/22 03:49
Total/NA	Analysis	6020B		2	331815	S4PD	ELLE	12/30/22 19:32
Total/NA	Prep	7471B			328178	UAMX	ELLE	12/17/22 14:10
Total/NA	Analysis	7471B		1	328721	UEFS	ELLE	12/19/22 17:27

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	328147	UVJN	ELLE	12/17/22 09:07

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 73.1

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM		1	330643	SJ89	ELLE	12/28/22 08:53
Total/NA	Prep	3546	DL		330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM	DL	10	330643	SJ89	ELLE	12/28/22 12:01
Total/NA	Prep	3546	RE		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	RE	1	331038	UJM0	ELLE	12/29/22 08:33
Total/NA	Prep	3546	REDL		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	REDL	10	331038	UJM0	ELLE	12/29/22 08:57
Total/NA	Prep	3050B			328341	UAMX	ELLE	12/19/22 03:49
Total/NA	Analysis	6020B		2	331815	S4PD	ELLE	12/30/22 19:36
Total/NA	Prep	7471B			328178	UAMX	ELLE	12/17/22 14:10
Total/NA	Analysis	7471B		1	328721	UEFS	ELLE	12/19/22 17:29

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	Moisture		1	328147	UVJN	ELLE	12/17/22 09:07

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 76.9

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3546			330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM		1	330643	SJ89	ELLE	12/28/22 09:16
Total/NA	Prep	3546	DL		330329	LJG2	ELLE	12/27/22 09:42
Total/NA	Analysis	8270E SIM	DL	10	330643	SJ89	ELLE	12/28/22 12:25
Total/NA	Prep	3546	RE		330911	ZB3H	ELLE	12/28/22 16:50
Total/NA	Analysis	8270E SIM	RE	1	331038	UJM0	ELLE	12/29/22 09:20
Total/NA	Prep	3050B			328341	UAMX	ELLE	12/19/22 03:49
Total/NA	Analysis	6020B		2	331815	S4PD	ELLE	12/30/22 19:38
Total/NA	Prep	7471B			328178	UAMX	ELLE	12/17/22 14:10
Total/NA	Analysis	7471B		1	328721	UEFS	ELLE	12/19/22 17:31

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
Moisture		Solid	Percent Moisture



Method Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Method	Method Description	Protocol	Laboratory
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7471B	Mercury (CVAA)	SW846	ELLE
Moisture	Percent Moisture	EPA	ELLE
3050B	Preparation, Metals	SW846	ELLE
3546	Microwave Extraction	SW846	ELLE
7471B	Preparation, Mercury	SW846	ELLE

Protocol References:

EPA = US Environmental Protection Agency

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-109325-1	SS-01-121422	Solid	12/14/22 11:05	12/15/22 10:30
410-109325-2	SS-02-121422	Solid	12/14/22 11:10	12/15/22 10:30
410-109325-3	SS-03-121422	Solid	12/14/22 11:15	12/15/22 10:30
410-109325-4	SS-04-121422	Solid	12/14/22 12:55	12/15/22 10:30
410-109325-5	SS-03-121422-DUP	Solid	12/14/22 11:15	12/15/22 10:30

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Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 410-109325-1

Login Number: 109325

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
WV: Container Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	





ANALYTICAL REPORT

PREPARED FOR

Attn: Kelsey Morton
Environmental Standards Inc.
1140 Valley Forge Road
PO BOX 810
Valley Forge, Pennsylvania 19482-0810

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JOB DESCRIPTION

White Park

JOB NUMBER

410-109326-1

Job Notes

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis.

Authorization



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Authorized for release by
Barbara Weyandt, Project Manager
Barbara.Weyandt@et.eurofinsus.com
(717)556-7264

Compliance Statement

Analytical test results meet all requirements of the associated regulatory program (e.g., NELAC (TNI), DoD, and ISO 17025) unless otherwise noted under the individual analysis. Data qualifiers are applied to note exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- QC results that exceed the upper limits and are associated with non-detect samples are qualified but further narration is not required since the bias is high and does not change a non-detect result. Further narration is also not required with QC blank detection when the associated sample concentration is non-detect or more than ten times the level in the blank.
- Matrix QC may not be reported if insufficient sample or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD is performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Measurement uncertainty values, as applicable, are available upon request.

Test results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. Times are local to the area of activity. Parameters listed in the 40 CFR Part 136 Table II as "analyze immediately" and tested in the laboratory are not performed within 15 minutes of collection.

This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITS OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. The foregoing express warranty is exclusive and is given in lieu of all other warranties, expressed or implied, except as otherwise agreed. We disclaim any other warranties, expressed or implied, including a warranty of fitness for particular purpose and warranty of merchantability. In no event shall Eurofins Lancaster Laboratories Environmental, LLC be liable for indirect, special, consequential, or incidental damages including, but not limited to, damages for loss of profit or goodwill regardless of (A) the negligence (either sole or concurrent) of Eurofins Lancaster Laboratories Environmental and (B) whether Eurofins Lancaster Laboratories Environmental has been informed of the possibility of such damages. We accept no legal responsibility for the purposes for which the client uses the test results. Except as otherwise agreed, no purchase order or other order for work shall be accepted by Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

Barb Weyandt



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Definitions/Glossary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*1	LCS/LCSD RPD exceeds control limits.
B	Compound was found in the blank and sample.
cn	Refer to Case Narrative for further detail
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
1C	Result is from the primary column on a dual-column method.
2C	Result is from the confirmation column on a dual-column method.
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Job ID: 410-109326-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Narrative

**Job Narrative
410-109326-1**

Receipt

The samples were received on 12/15/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

GC/MS Semi VOA

Method 8270E_SIM: The method blank for preparation batch 410-330362 and 410-331954 and analytical batch 410-332165 contained Fluorene above the method detection limit (MDL). Associated sample SPLP-5 (5-9.5) (410-109326-5) was not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8270E_SIM: Fluorene, Naphthalene, Phenanthrene and Pyrene was detected above the method detection limit and/or reporting limit in the method blank associated with preparation batch 410-330362 and 410-331954 and analytical batch 410-332165 as well as in the following samples: SPLP-2 (10-15) (410-109326-1), SPLP-1 (10-13.5) (410-109326-2), SPLP-3 (0.5-1) (410-109326-3), SPLP-4 (3-4) (410-109326-4), SPLP-5 (5-9.5) (410-109326-5) and SPLP-1-DUP (410-109326-6). All affected samples were re-extracted outside of holding time. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.



Detection Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-2 (10-15)

Lab Sample ID: 410-109326-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.011	J *1	0.056	0.011	ug/L	1		8270E SIM	SPLP East
Fluorene	0.059	B *- *1 cn	0.056	0.011	ug/L	1		8270E SIM	SPLP East
Naphthalene	0.11	B *1 cn	0.079	0.034	ug/L	1		8270E SIM	SPLP East
Pyrene	0.012	J B *1 cn	0.056	0.011	ug/L	1		8270E SIM	SPLP East
Barium	14	J	20	7.5	ug/L	1		6020B	SPLP East

Client Sample ID: SPLP-1 (10-13.5)

Lab Sample ID: 410-109326-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.055	*1	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Anthracene	0.031	J *1	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Fluoranthene	0.015	J *- *1	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Fluorene	0.17	B *- *1 cn	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Naphthalene	0.34	B *1 cn	0.076	0.033	ug/L	1		8270E SIM	SPLP East
Phenanthrene	0.44	B *- *1 cn	0.076	0.033	ug/L	1		8270E SIM	SPLP East
Pyrene	0.026	J B *1 cn	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Barium	13	J	20	7.5	ug/L	1		6020B	SPLP East

Client Sample ID: SPLP-3 (0.5-1)

Lab Sample ID: 410-109326-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.020	J *1	0.087	0.017	ug/L	1		8270E SIM	SPLP East
Fluorene	0.056	J B *- *1 cn	0.087	0.017	ug/L	1		8270E SIM	SPLP East
Naphthalene	0.18	B *1 cn	0.12	0.052	ug/L	1		8270E SIM	SPLP East
Barium	29		20	7.5	ug/L	1		6020B	SPLP East
Lead	8.0		5.0	0.71	ug/L	1		6020B	SPLP East

Client Sample ID: SPLP-4 (3-4)

Lab Sample ID: 410-109326-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.016	J *1	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Fluorene	0.058	B *- *1 cn	0.054	0.011	ug/L	1		8270E SIM	SPLP East
Naphthalene	0.11	B *1 cn	0.075	0.032	ug/L	1		8270E SIM	SPLP East
Barium	15	J	20	7.5	ug/L	1		6020B	SPLP East

Client Sample ID: SPLP-5 (5-9.5)

Lab Sample ID: 410-109326-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.046	J *1	0.071	0.014	ug/L	1		8270E SIM	SPLP East
Fluorene	0.20	B *- *1 cn	0.071	0.014	ug/L	1		8270E SIM	SPLP East
Barium	73		20	7.5	ug/L	1		6020B	SPLP East

Client Sample ID: SPLP-1-DUP

Lab Sample ID: 410-109326-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acenaphthene	0.023	J *1	0.057	0.011	ug/L	1		8270E SIM	SPLP East
Fluorene	0.044	J B *- *1 cn	0.057	0.011	ug/L	1		8270E SIM	SPLP East
Barium	8.2	J	20	7.5	ug/L	1		6020B	SPLP East

This Detection Summary does not include radiochemical test results.

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-2 (10-15)

Lab Sample ID: 410-109326-1

Date Collected: 12/14/22 13:15

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.011	J *1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Acenaphthylene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Anthracene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[a]anthracene	ND	*- *1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[a]pyrene	ND	*- *1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[b]fluoranthene	ND	*- *1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[g,h,i]perylene	ND		0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[k]fluoranthene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Chrysene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Dibenz(a,h)anthracene	ND		0.056	0.023	ug/L		01/03/23 08:38	01/03/23 17:33	1
Fluoranthene	ND	*- *1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Fluorene	0.059	B *- *1 cn	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.056	0.023	ug/L		01/03/23 08:38	01/03/23 17:33	1
Naphthalene	0.11	B *1 cn	0.079	0.034	ug/L		01/03/23 08:38	01/03/23 17:33	1
Phenanthrene	ND	*- *1 cn	0.079	0.034	ug/L		01/03/23 08:38	01/03/23 17:33	1
Pyrene	0.012	J B *1 cn	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	78		47 - 128				01/03/23 08:38	01/03/23 17:33	1
Benzo(a)pyrene-d12 (Surr)	76		10 - 110				01/03/23 08:38	01/03/23 17:33	1
1-Methylnaphthalene-d10 (Surr)	74		36 - 111				01/03/23 08:38	01/03/23 17:33	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	F2	20	6.8	ug/L		12/30/22 05:05	12/30/22 22:35	1
Barium	14	J	20	7.5	ug/L		12/30/22 05:05	12/30/22 22:35	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 22:35	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 22:35	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 22:35	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 22:35	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 22:35	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 22:35	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1	0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:05	1

Client Sample ID: SPLP-1 (10-13.5)

Lab Sample ID: 410-109326-2

Date Collected: 12/14/22 13:55

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.055	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Acenaphthylene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Anthracene	0.031	J *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[a]anthracene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[a]pyrene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[b]fluoranthene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[g,h,i]perylene	ND		0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[k]fluoranthene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-1 (10-13.5)

Lab Sample ID: 410-109326-2

Date Collected: 12/14/22 13:55

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chrysene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Dibenz(a,h)anthracene	ND		0.054	0.022	ug/L		01/03/23 08:38	01/03/23 18:38	1
Fluoranthene	0.015	J *- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Fluorene	0.17	B *- *1 cn	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.054	0.022	ug/L		01/03/23 08:38	01/03/23 18:38	1
Naphthalene	0.34	B *1 cn	0.076	0.033	ug/L		01/03/23 08:38	01/03/23 18:38	1
Phenanthrene	0.44	B *- *1 cn	0.076	0.033	ug/L		01/03/23 08:38	01/03/23 18:38	1
Pyrene	0.026	J B *1 cn	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	72		47 - 128				01/03/23 08:38	01/03/23 18:38	1
Benzo(a)pyrene-d12 (Surr)	80		10 - 110				01/03/23 08:38	01/03/23 18:38	1
1-Methylnaphthalene-d10 (Surr)	74		36 - 111				01/03/23 08:38	01/03/23 18:38	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 22:58	1
Barium	13	J	20	7.5	ug/L		12/30/22 05:05	12/30/22 22:58	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 22:58	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 22:58	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 22:58	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 22:58	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 22:58	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 22:58	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:21	1

Client Sample ID: SPLP-3 (0.5-1)

Lab Sample ID: 410-109326-3

Date Collected: 12/14/22 14:30

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.020	J *1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Acenaphthylene	ND	*1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Anthracene	ND	*1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Benzo[a]anthracene	ND	*- *1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Benzo[a]pyrene	ND	*- *1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Benzo[b]fluoranthene	ND	*- *1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Benzo[g,h,i]perylene	ND		0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Benzo[k]fluoranthene	ND	*1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Chrysene	ND	*1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Dibenz(a,h)anthracene	ND		0.087	0.035	ug/L		01/03/23 08:38	01/03/23 19:00	1
Fluoranthene	ND	*- *1	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Fluorene	0.056	J B *- *1 cn	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.087	0.035	ug/L		01/03/23 08:38	01/03/23 19:00	1
Naphthalene	0.18	B *1 cn	0.12	0.052	ug/L		01/03/23 08:38	01/03/23 19:00	1
Phenanthrene	ND	*- *1 cn	0.12	0.052	ug/L		01/03/23 08:38	01/03/23 19:00	1
Pyrene	ND	*1 cn	0.087	0.017	ug/L		01/03/23 08:38	01/03/23 19:00	1

Eurofins Lancaster Laboratories Environment Testing, LLC

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-3 (0.5-1)

Lab Sample ID: 410-109326-3

Date Collected: 12/14/22 14:30

Matrix: Solid

Date Received: 12/15/22 10:30

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	71		47 - 128	01/03/23 08:38	01/03/23 19:00	1
Benzo(a)pyrene-d12 (Surr)	84		10 - 110	01/03/23 08:38	01/03/23 19:00	1
1-Methylnaphthalene-d10 (Surr)	78		36 - 111	01/03/23 08:38	01/03/23 19:00	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 23:00	1
Barium	29		20	7.5	ug/L		12/30/22 05:05	12/30/22 23:00	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 23:00	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 23:00	1
Lead	8.0		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 23:00	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 23:00	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 23:00	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 23:00	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:23	1

Client Sample ID: SPLP-4 (3-4)

Lab Sample ID: 410-109326-4

Date Collected: 12/14/22 15:00

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.016	J *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Acenaphthylene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Anthracene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Benzo[a]anthracene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Benzo[a]pyrene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Benzo[b]fluoranthene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Benzo[g,h,i]perylene	ND		0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Benzo[k]fluoranthene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Chrysene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Dibenz(a,h)anthracene	ND		0.054	0.021	ug/L		01/03/23 08:38	01/03/23 19:22	1
Fluoranthene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Fluorene	0.058	B *- *1 cn	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.054	0.021	ug/L		01/03/23 08:38	01/03/23 19:22	1
Naphthalene	0.11	B *1 cn	0.075	0.032	ug/L		01/03/23 08:38	01/03/23 19:22	1
Phenanthrene	ND	*- *1 cn	0.075	0.032	ug/L		01/03/23 08:38	01/03/23 19:22	1
Pyrene	ND	*1 cn	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 19:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	72		47 - 128	01/03/23 08:38	01/03/23 19:22	1
Benzo(a)pyrene-d12 (Surr)	81		10 - 110	01/03/23 08:38	01/03/23 19:22	1
1-Methylnaphthalene-d10 (Surr)	73		36 - 111	01/03/23 08:38	01/03/23 19:22	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 22:54	1
Barium	15	J	20	7.5	ug/L		12/30/22 05:05	12/30/22 22:54	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-4 (3-4)

Lab Sample ID: 410-109326-4

Date Collected: 12/14/22 15:00

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 6020B - Metals (ICP/MS) - SPLP East (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 22:54	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 22:54	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 22:54	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 22:54	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 22:54	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 22:54	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:17	1

Client Sample ID: SPLP-5 (5-9.5)

Lab Sample ID: 410-109326-5

Date Collected: 12/14/22 14:55

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.046	J *1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Acenaphthylene	ND	*1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Anthracene	ND	*1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Benzo[a]anthracene	ND	*- *1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Benzo[a]pyrene	ND	*- *1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Benzo[b]fluoranthene	ND	*- *1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Benzo[g,h,i]perylene	ND		0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Benzo[k]fluoranthene	ND	*1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Chrysene	ND	*1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Dibenz(a,h)anthracene	ND		0.071	0.028	ug/L		01/03/23 08:38	01/03/23 19:44	1
Fluoranthene	ND	*- *1	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Fluorene	0.20	B *- *1 cn	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.071	0.028	ug/L		01/03/23 08:38	01/03/23 19:44	1
Naphthalene	ND	*1 cn	0.099	0.042	ug/L		01/03/23 08:38	01/03/23 19:44	1
Phenanthrene	ND	*- *1 cn	0.099	0.042	ug/L		01/03/23 08:38	01/03/23 19:44	1
Pyrene	ND	*1 cn	0.071	0.014	ug/L		01/03/23 08:38	01/03/23 19:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	58		47 - 128	01/03/23 08:38	01/03/23 19:44	1
Benzo(a)pyrene-d12 (Surr)	71		10 - 110	01/03/23 08:38	01/03/23 19:44	1
1-Methylnaphthalene-d10 (Surr)	61		36 - 111	01/03/23 08:38	01/03/23 19:44	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 23:04	1
Barium	73		20	7.5	ug/L		12/30/22 05:05	12/30/22 23:04	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 23:04	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 23:04	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 23:04	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 23:04	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 23:04	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 23:04	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-5 (5-9.5)

Lab Sample ID: 410-109326-5

Date Collected: 12/14/22 14:55

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:27	1

Client Sample ID: SPLP-1-DUP

Lab Sample ID: 410-109326-6

Date Collected: 12/14/22 13:55

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.023	J *1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Acenaphthylene	ND	*1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Anthracene	ND	*1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Benzo[a]anthracene	ND	*- *1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Benzo[a]pyrene	ND	*- *1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Benzo[b]fluoranthene	ND	*- *1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Benzo[g,h,i]perylene	ND		0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Benzo[k]fluoranthene	ND	*1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Chrysene	ND	*1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Dibenz(a,h)anthracene	ND		0.057	0.023	ug/L		01/03/23 08:38	01/03/23 20:06	1
Fluoranthene	ND	*- *1	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Fluorene	0.044	J B *- *1 cn	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.057	0.023	ug/L		01/03/23 08:38	01/03/23 20:06	1
Naphthalene	ND	*1 cn	0.080	0.034	ug/L		01/03/23 08:38	01/03/23 20:06	1
Phenanthrene	ND	*- *1 cn	0.080	0.034	ug/L		01/03/23 08:38	01/03/23 20:06	1
Pyrene	ND	*1 cn	0.057	0.011	ug/L		01/03/23 08:38	01/03/23 20:06	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	65		47 - 128	01/03/23 08:38	01/03/23 20:06	1
Benzo(a)pyrene-d12 (Surr)	73		10 - 110	01/03/23 08:38	01/03/23 20:06	1
1-Methylnaphthalene-d10 (Surr)	37		36 - 111	01/03/23 08:38	01/03/23 20:06	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 23:06	1
Barium	8.2	J	20	7.5	ug/L		12/30/22 05:05	12/30/22 23:06	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 23:06	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 23:06	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 23:06	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 23:06	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 23:06	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 23:06	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:29	1

Surrogate Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FLN10 (47-128)	BAPd12 (10-110)	MNPd10 (36-111)
LCS 410-331954/2-A	Lab Control Sample	83	89	81
LCSD 410-331954/3-A	Lab Control Sample Dup	49	56	44
MB 410-331954/1-A	Method Blank	81	87	85

Surrogate Legend

FLN10 = Fluoranthene-d10 (Surr)
BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Matrix: Solid

Prep Type: SPLP East

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		FLN10 (47-128)	BAPd12 (10-110)	MNPd10 (36-111)
410-109326-1	SPLP-2 (10-15)	78	76	74
410-109326-1 MS	SPLP-2 (10-15)	76	88	77
410-109326-1 MSD	SPLP-2 (10-15)	78	87	86
410-109326-2	SPLP-1 (10-13.5)	72	80	74
410-109326-3	SPLP-3 (0.5-1)	71	84	78
410-109326-4	SPLP-4 (3-4)	72	81	73
410-109326-5	SPLP-5 (5-9.5)	58	71	61
410-109326-6	SPLP-1-DUP	65	73	37

Surrogate Legend

FLN10 = Fluoranthene-d10 (Surr)
BAPd12 = Benzo(a)pyrene-d12 (Surr)
MNPd10 = 1-Methylnaphthalene-d10 (Surr)

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 410-331954/1-A

Matrix: Solid

Analysis Batch: 332165

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 331954

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Acenaphthylene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Anthracene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Benzo[a]anthracene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Benzo[a]pyrene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Benzo[b]fluoranthene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Benzo[g,h,i]perylene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Benzo[k]fluoranthene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Chrysene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Dibenz(a,h)anthracene	ND		0.051	0.020	ug/L		01/03/23 08:38	01/03/23 16:28	1
Fluoranthene	ND		0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Fluorene	0.0159	J	0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1
Indeno[1,2,3-cd]pyrene	ND		0.051	0.020	ug/L		01/03/23 08:38	01/03/23 16:28	1
Naphthalene	0.142		0.071	0.031	ug/L		01/03/23 08:38	01/03/23 16:28	1
Phenanthrene	0.0591	J	0.071	0.031	ug/L		01/03/23 08:38	01/03/23 16:28	1
Pyrene	0.0118	J	0.051	0.010	ug/L		01/03/23 08:38	01/03/23 16:28	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
Fluoranthene-d10 (Surr)	81		47 - 128	01/03/23 08:38	01/03/23 16:28	1
Benzo(a)pyrene-d12 (Surr)	87		10 - 110	01/03/23 08:38	01/03/23 16:28	1
1-Methylnaphthalene-d10 (Surr)	85		36 - 111	01/03/23 08:38	01/03/23 16:28	1

Lab Sample ID: LCS 410-331954/2-A

Matrix: Solid

Analysis Batch: 332165

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 331954

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Acenaphthene	1.00	0.817		ug/L		82	42 - 120
Acenaphthylene	1.00	0.862		ug/L		86	49 - 120
Anthracene	1.00	0.933		ug/L		93	54 - 121
Benzo[a]anthracene	1.00	0.944		ug/L		94	61 - 122
Benzo[a]pyrene	1.00	0.930		ug/L		93	60 - 120
Benzo[b]fluoranthene	1.00	0.829		ug/L		83	58 - 122
Benzo[g,h,i]perylene	1.00	1.01		ug/L		101	50 - 120
Benzo[k]fluoranthene	1.00	0.950		ug/L		95	57 - 128
Chrysene	1.00	0.937		ug/L		94	55 - 123
Dibenz(a,h)anthracene	1.00	1.03		ug/L		103	50 - 121
Fluoranthene	1.00	0.911		ug/L		91	61 - 123
Fluorene	1.00	0.916		ug/L		92	55 - 120
Indeno[1,2,3-cd]pyrene	1.00	1.05		ug/L		105	47 - 143
Naphthalene	1.00	0.873		ug/L		87	20 - 120
Phenanthrene	1.00	0.893		ug/L		89	59 - 120
Pyrene	1.00	0.927		ug/L		93	46 - 122

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Fluoranthene-d10 (Surr)	83		47 - 128
Benzo(a)pyrene-d12 (Surr)	89		10 - 110
1-Methylnaphthalene-d10 (Surr)	81		36 - 111

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: LCSD 410-331954/3-A

Matrix: Solid

Analysis Batch: 332165

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 331954

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	Limit
							Limits	RPD		
Acenaphthene	1.00	0.440	*1	ug/L		44	42 - 120	60	30	
Acenaphthylene	1.00	0.486	*1	ug/L		49	49 - 120	56	30	
Anthracene	1.00	0.542	*1	ug/L		54	54 - 121	53	30	
Benzo[a]anthracene	1.00	0.547	*- *1	ug/L		55	61 - 122	53	30	
Benzo[a]pyrene	1.00	0.590	*- *1	ug/L		59	60 - 120	45	30	
Benzo[b]fluoranthene	1.00	0.573	*- *1	ug/L		57	58 - 122	37	30	
Benzo[g,h,i]perylene	1.00	0.850		ug/L		85	50 - 120	18	30	
Benzo[k]fluoranthene	1.00	0.609	*1	ug/L		61	57 - 128	44	30	
Chrysene	1.00	0.602	*1	ug/L		60	55 - 123	44	30	
Dibenz(a,h)anthracene	1.00	0.839		ug/L		84	50 - 121	20	30	
Fluoranthene	1.00	0.538	*- *1	ug/L		54	61 - 123	51	30	
Fluorene	1.00	0.498	*- *1	ug/L		50	55 - 120	59	30	
Indeno[1,2,3-cd]pyrene	1.00	0.753	*1	ug/L		75	47 - 143	33	30	
Naphthalene	1.00	0.478	*1	ug/L		48	20 - 120	58	30	
Phenanthrene	1.00	0.514	*- *1	ug/L		51	59 - 120	54	30	
Pyrene	1.00	0.554	*1	ug/L		55	46 - 122	50	30	

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Fluoranthene-d10 (Surr)	49		47 - 128
Benzo(a)pyrene-d12 (Surr)	56		10 - 110
1-Methylnaphthalene-d10 (Surr)	44		36 - 111

Lab Sample ID: 410-109326-1 MS

Matrix: Solid

Analysis Batch: 332165

Client Sample ID: SPLP-2 (10-15)

Prep Type: SPLP East

Prep Batch: 331954

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	RPD
Acenaphthene	0.011	J *1	1.11	0.890		ug/L		79	42 - 120	
Acenaphthylene	ND	*1	1.11	0.926		ug/L		83	49 - 120	
Anthracene	ND	*1	1.11	1.04		ug/L		93	54 - 121	
Benzo[a]anthracene	ND	*- *1	1.11	1.07		ug/L		96	61 - 122	
Benzo[a]pyrene	ND	*- *1	1.11	1.00		ug/L		90	60 - 120	
Benzo[b]fluoranthene	ND	*- *1	1.11	0.979		ug/L		88	58 - 122	
Benzo[g,h,i]perylene	ND		1.11	1.04		ug/L		93	50 - 120	
Benzo[k]fluoranthene	ND	*1	1.11	0.978		ug/L		88	57 - 128	
Chrysene	ND	*1	1.11	1.00		ug/L		90	55 - 123	
Dibenz(a,h)anthracene	ND		1.11	0.993		ug/L		89	50 - 121	
Fluoranthene	ND	*- *1	1.11	0.942		ug/L		85	61 - 123	
Fluorene	0.059	B *- *1 cn	1.11	0.946		ug/L		80	55 - 120	
Indeno[1,2,3-cd]pyrene	ND	*1	1.11	1.03		ug/L		92	47 - 143	
Naphthalene	0.11	B *1 cn	1.11	1.02		ug/L		81	20 - 120	
Phenanthrene	ND	*- *1 cn	1.11	1.01		ug/L		90	59 - 120	
Pyrene	0.012	J B *1 cn	1.11	1.01		ug/L		89	46 - 122	

Surrogate	MS %Recovery	MS Qualifier	Limits
Fluoranthene-d10 (Surr)	76		47 - 128
Benzo(a)pyrene-d12 (Surr)	88		10 - 110
1-Methylnaphthalene-d10 (Surr)	77		36 - 111

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: 410-109326-1 MSD
Matrix: Solid
Analysis Batch: 332165

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331954

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	RPD	RPD
	Result	Qualifier	Added	Result	Qualifier				Limits		Limit
Acenaphthene	0.011	J *1	1.15	0.939		ug/L		81	42 - 120	5	30
Acenaphthylene	ND	*1	1.15	0.962		ug/L		84	49 - 120	4	30
Anthracene	ND	*1	1.15	1.08		ug/L		94	54 - 121	4	30
Benzo[a]anthracene	ND	*- *1	1.15	1.09		ug/L		95	61 - 122	2	30
Benzo[a]pyrene	ND	*- *1	1.15	1.02		ug/L		89	60 - 120	2	30
Benzo[b]fluoranthene	ND	*- *1	1.15	0.949		ug/L		83	58 - 122	3	30
Benzo[g,h,i]perylene	ND		1.15	1.14		ug/L		99	50 - 120	9	30
Benzo[k]fluoranthene	ND	*1	1.15	1.01		ug/L		88	57 - 128	3	30
Chrysene	ND	*1	1.15	1.04		ug/L		91	55 - 123	3	30
Dibenz(a,h)anthracene	ND		1.15	1.08		ug/L		94	50 - 121	9	30
Fluoranthene	ND	*- *1	1.15	0.984		ug/L		86	61 - 123	4	30
Fluorene	0.059	B *- *1 cn	1.15	1.07		ug/L		88	55 - 120	13	30
Indeno[1,2,3-cd]pyrene	ND	*1	1.15	1.07		ug/L		93	47 - 143	4	30
Naphthalene	0.11	B *1 cn	1.15	1.06		ug/L		82	20 - 120	4	30
Phenanthrene	ND	*- *1 cn	1.15	1.03		ug/L		89	59 - 120	2	30
Pyrene	0.012	J B *1 cn	1.15	0.983		ug/L		85	46 - 122	3	30
	MSD	MSD									
Surrogate	%Recovery	Qualifier	Limits								
Fluoranthene-d10 (Surr)	78		47 - 128								
Benzo(a)pyrene-d12 (Surr)	87		10 - 110								
1-Methylnaphthalene-d10 (Surr)	86		36 - 111								

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 410-331446/1-A
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 331446

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	ND		20	6.8	ug/L		12/30/22 05:05	12/30/22 22:31	1
Barium	ND		20	7.5	ug/L		12/30/22 05:05	12/30/22 22:31	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 22:31	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 22:31	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 22:31	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 22:31	1
Silver	ND		5.0	1.0	ug/L		12/30/22 05:05	12/30/22 22:31	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 22:31	1

Lab Sample ID: LCS 410-331446/2-A
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 331446

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec
		Result	Qualifier				Limits
Arsenic	5000	4820		ug/L		96	85 - 120
Barium	5000	5290		ug/L		106	80 - 120
Cadmium	500	516		ug/L		103	86 - 113
Chromium	5000	5090		ug/L		102	90 - 115
Lead	500	506		ug/L		101	90 - 115
Selenium	1000	1010		ug/L		101	80 - 120

Eurofins Lancaster Laboratories Environment Testing, LLC

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 410-331446/2-A
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 331446

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Silver	500	509		ug/L		102	88 - 113	
Zinc	5000	5000		ug/L		100	90 - 115	

Lab Sample ID: 410-109326-1 MS
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331446

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec	
									Limits	
Arsenic	ND	F2	5000	5020		ug/L		100	75 - 125	
Barium	14	J	100000	108000		ug/L		108	75 - 125	
Cadmium	ND		1000	992		ug/L		99	75 - 125	
Chromium	ND		5000	4640		ug/L		93	75 - 125	
Lead	ND		5000	5110		ug/L		102	75 - 125	
Selenium	ND		1000	1170		ug/L		117	75 - 125	
Silver	ND		5000	4880		ug/L		98	75 - 125	
Zinc	ND		5000	5500	J	ug/L		110	75 - 125	

Lab Sample ID: 410-109326-1 MSD
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331446

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec		RPD	
									Limits		RPD	Limit
Arsenic	ND	F2	5000	6260	F2	ug/L		125	75 - 125		22	20
Barium	14	J	100000	117000		ug/L		117	75 - 125		7	20
Cadmium	ND		1000	1110		ug/L		111	75 - 125		11	20
Chromium	ND		5000	5430		ug/L		109	75 - 125		16	20
Lead	ND		5000	5820		ug/L		116	75 - 125		13	20
Selenium	ND		1000	1210		ug/L		121	75 - 125		3	20
Silver	ND		5000	5200		ug/L		104	75 - 125		6	20
Zinc	ND		5000	5800	J	ug/L		116	75 - 125		5	20

Lab Sample ID: 410-109326-1 DU
Matrix: Solid
Analysis Batch: 331815

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331446

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD	
								RPD	Limit
Arsenic	ND	F2	ND		ug/L		NC	20	
Barium	14	J	13.0	J	ug/L		5	20	
Cadmium	ND		ND		ug/L		NC	20	
Chromium	ND		ND		ug/L		NC	20	
Lead	ND		ND		ug/L		NC	20	
Selenium	ND		ND		ug/L		NC	20	
Silver	ND		ND		ug/L		NC	20	
Zinc	ND		ND		ug/L		NC	20	

QC Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 410-331448/1-A
Matrix: Solid
Analysis Batch: 331726

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 331448

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:01	1

Lab Sample ID: LCS 410-331448/2-A
Matrix: Solid
Analysis Batch: 331726

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 331448

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	1.00	0.918		ug/L		92	80 - 118

Lab Sample ID: 410-109326-1 MS
Matrix: Solid
Analysis Batch: 331726

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331448

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	ND	F1	20.0	14.1	F1	ug/L		70	80 - 120

Lab Sample ID: 410-109326-1 MSD
Matrix: Solid
Analysis Batch: 331726

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331448

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Mercury	ND	F1	20.0	13.7	F1	ug/L		68	80 - 120	3	20

Lab Sample ID: 410-109326-1 DU
Matrix: Solid
Analysis Batch: 331726

Client Sample ID: SPLP-2 (10-15)
Prep Type: SPLP East
Prep Batch: 331448

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	ND	F1	ND		ug/L		NC	20

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

GC/MS Semi VOA

Leach Batch: 330362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	1312	
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	1312	
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	1312	
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	1312	
410-109326-6	SPLP-1-DUP	SPLP East	Solid	1312	
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	1312	

Prep Batch: 331954

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	3510C	330362
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	3510C	330362
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	3510C	330362
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	3510C	330362
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	3510C	330362
410-109326-6	SPLP-1-DUP	SPLP East	Solid	3510C	330362
MB 410-331954/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 410-331954/2-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 410-331954/3-A	Lab Control Sample Dup	Total/NA	Solid	3510C	
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	3510C	330362
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	3510C	330362

Analysis Batch: 332165

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	8270E SIM	331954
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	8270E SIM	331954
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	8270E SIM	331954
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	8270E SIM	331954
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	8270E SIM	331954
410-109326-6	SPLP-1-DUP	SPLP East	Solid	8270E SIM	331954
MB 410-331954/1-A	Method Blank	Total/NA	Solid	8270E SIM	331954
LCS 410-331954/2-A	Lab Control Sample	Total/NA	Solid	8270E SIM	331954
LCSD 410-331954/3-A	Lab Control Sample Dup	Total/NA	Solid	8270E SIM	331954
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	8270E SIM	331954
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	8270E SIM	331954

Leach Batch: 333906

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1 - RE	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-2 - RE	SPLP-1 (10-13.5)	SPLP East	Solid	1312	
410-109326-3 - RE	SPLP-3 (0.5-1)	SPLP East	Solid	1312	
410-109326-4 - RE	SPLP-4 (3-4)	SPLP East	Solid	1312	
410-109326-5 - RE	SPLP-5 (5-9.5)	SPLP East	Solid	1312	
410-109326-6 - RE	SPLP-1-DUP	SPLP East	Solid	1312	

Prep Batch: 335011

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1 - RE	SPLP-2 (10-15)	SPLP East	Solid	3510C	333906
410-109326-2 - RE	SPLP-1 (10-13.5)	SPLP East	Solid	3510C	333906
410-109326-3 - RE	SPLP-3 (0.5-1)	SPLP East	Solid	3510C	333906

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

GC/MS Semi VOA (Continued)

Prep Batch: 335011 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-4 - RE	SPLP-4 (3-4)	SPLP East	Solid	3510C	333906
410-109326-5 - RE	SPLP-5 (5-9.5)	SPLP East	Solid	3510C	333906
410-109326-6 - RE	SPLP-1-DUP	SPLP East	Solid	3510C	333906
MB 410-335011/1-A	Method Blank	Total/NA	Solid	3510C	
LCS 410-335011/2-A	Lab Control Sample	Total/NA	Solid	3510C	
LCSD 410-335011/3-A	Lab Control Sample Dup	Total/NA	Solid	3510C	

Analysis Batch: 335128

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1 - RE	SPLP-2 (10-15)	SPLP East	Solid	8270E SIM	335011
410-109326-2 - RE	SPLP-1 (10-13.5)	SPLP East	Solid	8270E SIM	335011
410-109326-3 - RE	SPLP-3 (0.5-1)	SPLP East	Solid	8270E SIM	335011
410-109326-4 - RE	SPLP-4 (3-4)	SPLP East	Solid	8270E SIM	335011
410-109326-5 - RE	SPLP-5 (5-9.5)	SPLP East	Solid	8270E SIM	335011
410-109326-6 - RE	SPLP-1-DUP	SPLP East	Solid	8270E SIM	335011
MB 410-335011/1-A	Method Blank	Total/NA	Solid	8270E SIM	335011
LCS 410-335011/2-A	Lab Control Sample	Total/NA	Solid	8270E SIM	335011
LCSD 410-335011/3-A	Lab Control Sample Dup	Total/NA	Solid	8270E SIM	335011

Metals

Leach Batch: 330362

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	1312	
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	1312	
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	1312	
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	1312	
410-109326-6	SPLP-1-DUP	SPLP East	Solid	1312	
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	1312	
410-109326-1 DU	SPLP-2 (10-15)	SPLP East	Solid	1312	

Prep Batch: 331446

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	3005A	330362
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	3005A	330362
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	3005A	330362
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	3005A	330362
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	3005A	330362
410-109326-6	SPLP-1-DUP	SPLP East	Solid	3005A	330362
MB 410-331446/1-A	Method Blank	Total Recoverable	Solid	3005A	
LCS 410-331446/2-A	Lab Control Sample	Total Recoverable	Solid	3005A	
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	3005A	330362
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	3005A	330362
410-109326-1 DU	SPLP-2 (10-15)	SPLP East	Solid	3005A	330362

Prep Batch: 331448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	7470A	330362
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	7470A	330362

QC Association Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Metals (Continued)

Prep Batch: 331448 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	7470A	330362
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	7470A	330362
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	7470A	330362
410-109326-6	SPLP-1-DUP	SPLP East	Solid	7470A	330362
MB 410-331448/1-A	Method Blank	Total/NA	Solid	7470A	
LCS 410-331448/2-A	Lab Control Sample	Total/NA	Solid	7470A	
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	7470A	330362
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	7470A	330362
410-109326-1 DU	SPLP-2 (10-15)	SPLP East	Solid	7470A	330362

Analysis Batch: 331726

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	7470A	331448
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	7470A	331448
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	7470A	331448
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	7470A	331448
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	7470A	331448
410-109326-6	SPLP-1-DUP	SPLP East	Solid	7470A	331448
MB 410-331448/1-A	Method Blank	Total/NA	Solid	7470A	331448
LCS 410-331448/2-A	Lab Control Sample	Total/NA	Solid	7470A	331448
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	7470A	331448
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	7470A	331448
410-109326-1 DU	SPLP-2 (10-15)	SPLP East	Solid	7470A	331448

Analysis Batch: 331815

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
410-109326-1	SPLP-2 (10-15)	SPLP East	Solid	6020B	331446
410-109326-2	SPLP-1 (10-13.5)	SPLP East	Solid	6020B	331446
410-109326-3	SPLP-3 (0.5-1)	SPLP East	Solid	6020B	331446
410-109326-4	SPLP-4 (3-4)	SPLP East	Solid	6020B	331446
410-109326-5	SPLP-5 (5-9.5)	SPLP East	Solid	6020B	331446
410-109326-6	SPLP-1-DUP	SPLP East	Solid	6020B	331446
MB 410-331446/1-A	Method Blank	Total Recoverable	Solid	6020B	331446
LCS 410-331446/2-A	Lab Control Sample	Total Recoverable	Solid	6020B	331446
410-109326-1 MS	SPLP-2 (10-15)	SPLP East	Solid	6020B	331446
410-109326-1 MSD	SPLP-2 (10-15)	SPLP East	Solid	6020B	331446
410-109326-1 DU	SPLP-2 (10-15)	SPLP East	Solid	6020B	331446

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-2 (10-15)

Lab Sample ID: 410-109326-1

Date Collected: 12/14/22 13:15

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 17:33
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 08:11
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 22:35
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:05

Client Sample ID: SPLP-1 (10-13.5)

Lab Sample ID: 410-109326-2

Date Collected: 12/14/22 13:55

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 18:38
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 08:32
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 22:58
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:21

Client Sample ID: SPLP-3 (0.5-1)

Lab Sample ID: 410-109326-3

Date Collected: 12/14/22 14:30

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 19:00
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 08:54
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 23:00

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-3 (0.5-1)

Lab Sample ID: 410-109326-3

Date Collected: 12/14/22 14:30

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:23

Client Sample ID: SPLP-4 (3-4)

Lab Sample ID: 410-109326-4

Date Collected: 12/14/22 15:00

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 19:22
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 09:16
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 22:54
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:17

Client Sample ID: SPLP-5 (5-9.5)

Lab Sample ID: 410-109326-5

Date Collected: 12/14/22 14:55

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 19:44
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 09:38
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 23:04
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:27

Lab Chronicle

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-1-DUP

Lab Sample ID: 410-109326-6

Date Collected: 12/14/22 13:55

Matrix: Solid

Date Received: 12/15/22 10:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3510C			331954	YDF5	ELLE	01/03/23 08:38
SPLP East	Analysis	8270E SIM		1	332165	UJM0	ELLE	01/03/23 20:06
SPLP East	Leach	1312	RE		333906	UNWS	ELLE	01/10/23 12:10 - 01/11/23 06:00 ¹
SPLP East	Prep	3510C	RE		335011	QJZ6	ELLE	01/12/23 16:00
SPLP East	Analysis	8270E SIM	RE	1	335128	SJ89	ELLE	01/13/23 10:00
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	3005A			331446	UAMX	ELLE	12/30/22 05:05
SPLP East	Analysis	6020B		1	331815	S4PD	ELLE	12/30/22 23:06
SPLP East	Leach	1312			330362	UNWS	ELLE	12/28/22 16:30 - 12/29/22 09:15 ¹
SPLP East	Prep	7470A			331448	UAMX	ELLE	12/30/22 05:10
SPLP East	Analysis	7470A		1	331726	UEFS	ELLE	12/30/22 16:29

¹ Completion dates and times are reported or not reported per method requirements or individual lab discretion.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Accreditation/Certification Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
West Virginia DEP	State	055	07-31-23

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
7470A	7470A	Solid	Mercury



Method Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Method	Method Description	Protocol	Laboratory
8270E SIM	Semivolatile Organic Compounds (GC/MS SIM)	SW846	ELLE
6020B	Metals (ICP/MS)	SW846	ELLE
7470A	Mercury (CVAA)	SW846	ELLE
1312	SPLP Extraction	SW846	ELLE
3005A	Preparation, Total Recoverable or Dissolved Metals	SW846	ELLE
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	ELLE
7470A	Preparation, Mercury	SW846	ELLE

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Sample Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-109326-1	SPLP-2 (10-15)	Solid	12/14/22 13:15	12/15/22 10:30
410-109326-2	SPLP-1 (10-13.5)	Solid	12/14/22 13:55	12/15/22 10:30
410-109326-3	SPLP-3 (0.5-1)	Solid	12/14/22 14:30	12/15/22 10:30
410-109326-4	SPLP-4 (3-4)	Solid	12/14/22 15:00	12/15/22 10:30
410-109326-5	SPLP-5 (5-9.5)	Solid	12/14/22 14:55	12/15/22 10:30
410-109326-6	SPLP-1-DUP	Solid	12/14/22 13:55	12/15/22 10:30

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Chain of Custody Record

410-109326 Chain of Custody

Sampler: K. Morton		Lab PM: Weyandt, Barbara A		Carrier Tracking No(s):		COC No: 410-71444-20911.1			
Phone: 814. 449-0221		E-Mail: Barbara.Weyandt@et.eurolinsus.com		State of Origin: WV		Page: Page 1 of 1			
Company: Environmental Standards Inc.		PWSID:		Analysis Requested				Job #:	
Address: 1140 Valley Forge Road PO BOX 810		Due Date Requested:		Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 6020B, 7470A, 8270E, SIM - SPLP 2-10-20B, 7471B, 8270E - SIM KM 12/14/22				Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
City: Valley Forge		TAT Requested (days):							
State, Zip: PA, 19482-0810		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No							
Phone: 814-449-0221(Tel)		PO #: Purchase Order not required							
Email: lwork@envstd.com		WO #:							
Project Name: White Park		Project #: 41013256		Total Number of containers		Special Instructions/Note:			
Site:		SSOW#:							
Sample Identification		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=wastolat, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of containers	
				Preservation Code:		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	
SPLP-2 (10-15)		12/14/22	1315	G	S	N	N	X	
SPLP-1 (10-13.5)		12/14/22	1355	G	S	N	N	X	
SPLP-3 (0.5-1)		12/14/22	1430	G	S	N	N	X	
SPLP-4 (3-4)		12/14/22	1500	G	S	N	N	X	
SPLP-5 (5-9.5)		12/14/22	1455	G	S	N	N	X	
SPLP-1 - DUP		12/14/22	1355	G	S	N	N	X	
KM 12/14/22		12/14/22		12/14/22		12/14/22		X	
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)			
<input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months			
Deliverable Requested: I, II, III, IV, Other (specify)						Special Instructions/QC Requirements:			
Empty Kit Relinquished by:		Date:		Time:		Method of Shipment:			
Relinquished by: [Signature]		Date/Time: 12/8/22 0848		Company: [Signature]		Received by: [Signature]		Date/Time: _____	
Relinquished by: [Signature]		Date/Time: 12/14/22 1740		Company: ES		Received by: [Signature]		Date/Time: _____	
Relinquished by: [Signature]		Date/Time: _____		Company: _____		Received by: [Signature]		Date/Time: 12/15/22 10:30	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:		0.8 (0.7-2.5)			

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 410-109326-1

Login Number: 109326

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
WV: Container Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

APPENDIX B
DATA VALIDATION REPORT



March 7, 2023

Mr. William Matthew Gadd, Project Manager
WVDEP, Office of Environmental Remediation
131A Peninsula Street
Wheeling, WV 26003

**Subject: Quality Assurance Review of Site Assessment Data
Parcel A – Southside Trail
White Park VRP # 21019
Morgantown, West Virginia**

Dear Mr. Gadd:

Enclosed is the quality assurance review for five soil and one synthetic precipitation leaching procedure aqueous field samples, not including quality control samples, collected at Parcel A, Southside Trail, White Park, WV. The soil and aqueous samples, collected on December 14, 2022, were reviewed for polyaromatic hydrocarbon compounds and metals results.

The analytical data associated with the White Park site were determined to meet the data quality objectives of the project.

As qualified, data collected during the field sampling activities can be used to characterize the site as well as to prepare a residual human health and ecological risk assessment for the site. The data can also be compared, as appropriate, to the environmental regulatory benchmarks, standards, and criteria under the West Virginia Department of Environmental Protection Brownfields and Voluntary Remediation Program.

To confidently use any of the analytical data within this entire sample set, the data user should understand the qualifications and limitations of the results.

If you have any questions or comments, or if we can be of any further assistance, please feel free to call.

Sincerely,



Lydia M. Work, LRS
Principal Chemist/Director of Operations

Enc.

**QUALITY ASSURANCE REVIEW FOR
WHITE PARK SITE SAMPLING
PERFORMED ON DECEMBER 14, 2022
LABORATORY SAMPLE DELIVERY GROUPS:
410-109325-1 and 410-109326-1**

March 2023

Submitted to:

**WEST VIRGINIA DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF LAND RESTORATION**

Mr. William Matthew Gadd, Project Manager
Office of Environmental Remediation
131A Peninsula Street
Wheeling, WV 26003

Prepared for:

CITY OF MORGANTOWN, WEST VIRGINIA

389 Spruce Street
Morgantown, WV 26505

Prepared by:

ENVIRONMENTAL STANDARDS, INC.

2501 Chapline Street
P.O. Box 6562
Wheeling, WV 26003

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Introduction

This quality assurance (QA) review is based upon an examination of 100% of the data generated from the analyses of the soil and Synthetic Precipitation Leaching Procedure (SPLP) soil samples collected on December 14, 2022, at the White Park site in Morgantown, West Virginia. The samples that have undergone review are listed on Table 1. Table 1 also presents the laboratory sample numbers, Sample Delivery Group (SDG) numbers, matrices, collection dates, and parameter(s) examined.

The analytical data for the soil and SPLP soil samples, including quality control (QC) samples, in SDGs 410-109325-1 and 410-109326-1 were validated (Stage 4 Full review, inclusive of raw data and QC summary forms) as indicated on Table 1. The analyses performed include: polycyclic aromatic hydrocarbon (PAH) compounds, and metals, by United States Environmental Protection Agency (US EPA), Office of Solid Waste's (SW-846) methods.

This data validation review was performed with guidance from the Quality Assurance Project Plan (QAPP) prepared for the City of Morgantown, West Virginia as part of the White Park, Parcel A – Southside Trail, Site Assessment Work Plan (Environmental Standards, December 12, 2022), the “US EPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review,” (US EPA, August 2017); “National Functional Guidelines for Inorganic Superfund Data Review,” (US EPA, August 2017); and “Guidance for Labeling Externally Validated Laboratory Analytical Data for Superfund Use,” (US EPA, January 2009). The National Functional Guidelines specifically address analyses performed in accordance with the Contract Laboratory Program (CLP) analytical methods. These validation guidelines are, therefore, not completely applicable to the type of analyses and analytical protocol performed for these samples. Environmental Standards, Inc. (Environmental Standards), used professional judgment to determine the usability of the analytical results and compliance relative to the analytical methods referenced by the laboratory.

Details of this QA review are presented in Section 1 of this report. The reported analytical results are presented in Section 2; any required data validation qualifications are presented on the analysis result forms in Section 2. The Laboratory Case Narratives are provided in Section 3. The Chain-of-Custody Records, Receipt Information, and Project Correspondence are also provided in Section 3. Support documentation can be provided upon request. Data were examined to determine the usability of the analytical results and compliance relative to the requirements specified in the analytical methods and the QAPP. In addition, the deliverables were evaluated for completeness and accuracy.

This report was prepared to provide a critical review of the laboratory analyses and reported analytical results. Rigorous QA reviews of laboratory-generated data routinely identify problems associated with analytical measurements, even from the most experienced and capable laboratories.

TABLE 1

SAMPLES INCLUDED IN THIS QUALITY ASSURANCE REVIEW

Laboratory Sample ID	SDG	Sample ID	Matrix	Sample Date	Analysis
410-109325-1	410-109325-1	SS-01-121422	Solid	12/14/22	P, M, Hg
410-109325-1	410-109325-1	SS-01-121422 MS (Matrix Spike)	Solid	12/14/22	P, M, Hg
410-109325-1	410-109325-1	SS-01-121422 MSD (Matrix Spike Duplicate)	Solid	12/14/22	P, M, Hg
410-109325-1	410-109325-1	SS-01-121422 DUP (Laboratory Duplicate)	Solid	12/14/22	M, Hg
410-109325-2	410-109325-1	SS-02-121422	Solid	12/14/22	P, M, Hg
410-109325-3	410-109325-1	SS-03-121422	Solid	12/14/22	P, M, Hg
410-109325-4	410-109325-1	SS-04-121422	Solid	12/14/22	P, M, Hg
410-109325-5	410-109325-1	SS-03-121422-DUP (Field Duplicate of SS-03-121422)	Solid	12/14/22	P, M, Hg
410-109326-1	410-109326-1	SPLP-2 (10-15)	SPLP (Solid)	12/14/22	P, M, Hg
410-109326-1	410-109326-1	SPLP-2 (10-15) MS (Matrix Spike)	SPLP (Solid)	12/14/22	P, M, Hg
410-109326-1	410-109326-1	SPLP-2 (10-15) MSD (Matrix Spike Duplicate)	SPLP (Solid)	12/14/22	P, M, Hg
410-109326-1	410-109326-1	SPLP-2 (10-15) DUP (Laboratory Duplicate)	SPLP (Solid)	12/14/22	M, Hg

NOTES:

- P - PAH Compounds by SW-846 Method 8270E Select Ion Monitoring (SIM). (10 analyses)
- M - Total Metals by SW-846 Method 6020B. (6 analyses)
- Hg - Mercury by SW-846 Methods 7470A/7471B. (6 analyses)

Quality Assurance Review

A. Organic Review

The analyses of five soil and one SPLP aqueous field samples, not including QC samples, collected at the White Park site by Environmental Standards, Inc., were performed by Eurofins Lancaster Laboratories Environment Testing, LLC (Eurofins Lancaster). The samples were analyzed for PAHs by SW-846 Method 8270E SIM. The specific samples and analyses reviewed are identified on Table 1. Table 1 also presents the laboratory sample numbers, SDG numbers, matrices, collection dates, and parameter(s) examined.

The findings in this report are based upon a review of sample holding times, condition of samples upon laboratory receipt, blank analysis results, laboratory control sample (LCS) and laboratory control samples duplicate (LCSD) results and precision, matrix spike (MS) and matrix spike duplicate (MSD) results, mass tuning injections, initial and continuing calibrations, surrogate recoveries, internal standard performance, laboratory and field duplicate results, sample preparation, instrument sensitivity, analytical sequence, the quantitation of positive results, and a critical evaluation of instrumental raw data. Any required data validation qualifications are presented on the data tables in Section 2. Qualifiers provided by the laboratory were maintained within the qualified Form 1s.

Issues are typically presented in two categories - deliverable issues and procedural issues. Deliverable issues are data issues that can easily be corrected and that may or may not impact the usability of the reported results. Procedural issues are issues that cannot be corrected and address method compliance issues; these issues may or may not impact the usability of the reported results. Comments are offered for clarification of issues relating to the data and do not typically impact the usability of the reported results. There were no issues or comments were not identified in this review.

Organic Data Qualifiers

Based upon a Stage 4 review of the data packages provided, organic data qualification was warranted. The principal areas of concern are blank contamination, out-of-criteria LCS/LCSD recoveries, LCS/LCSD imprecision, out-of-criteria MS/MSD recoveries, field duplicate imprecision, and results reported between the method detection limits (MDLs) and reporting limits (RLs).

Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues should not necessarily be construed as an indication of laboratory performance.

The following organic data qualifiers are presented.

Blank Contamination:

<u>Qualified Sample(s)</u>	<u>Analyte</u>	<u>Qualifier</u>	<u>Qualification</u>
SPLP-2 (10-15)	naphthalene, fluorene, and pyrene	U*	method blank contamination

Due to trace-level presence in the associated method blank, the reported positive result for naphthalene, fluorene and pyrene in the SDG 410-109326-1 samples listed above should be considered “not-detected” due to potential laboratory contamination and have been flagged “U*” on the data tables.

It should be noted that dilution factors and sample volume were taken into account when evaluating blank contamination.

LCS/LCSD Accuracy:

<u>Qualified Sample(s)</u>	<u>Analyte(s)</u>	<u>Qualifier(s)</u>	<u>Qualification</u>
SS-01-121422, SS-02-121422 SS-03-121422 SS-04-121422 SS-03-121422-DUP	acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, fluoranthene, and phenanthrene	UJ/J	low LCS recoveries
SPLP-2 (10-15)	benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, fluoranthene, fluorene, and phenanthrene	UJ/J	low LCS/LCSD recoveries
SPLP-2 (10-15)	acenaphthene, fluorene, naphthalene, and pyrene	J (unless previously flagged U*)	LCS/LCSD imprecision

The ability of the laboratory to accurately quantify acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, fluoranthene, and phenanthrene in the samples listed above was not demonstrated, and the results have been flagged as estimated with “J” value if detected and “UJ” if not detected on the qualified Form 1s. Low recoveries (< low laboratory limits%) were observed for these compounds in the associated LCS analysis.

The ability of the laboratory to accurately quantify benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, fluoranthene, fluorene, and phenanthrene in SDG 410-109326-1 sample SPLP-2 (10-15) was not demonstrated, the results have been flagged as estimated with “J” value if detected and “UJ” if not detected on the qualified Form 1s. Low recoveries (< low laboratory limits%) were observed for these compounds in the associated LCSD analysis.

The ability of the laboratory to accurately quantify acenaphthene, fluorene, naphthalene, and pyrene in SDG 410-109326-1 sample SPLP-2 (10-15) was not demonstrated, and the detected results have been estimated and flagged “J” on the data tables. High imprecision (> 30%) was observed for these compounds in the associated LCS/LCSD analyses.

MS/MSD Accuracy and Precision:

<u>Qualified Sample</u>	<u>Analyte(s)</u>	<u>Qualifier</u>	<u>Qualification</u>
SS-01-121422	acenaphthylene, anthracene, benzo(a)anthracene, benzo(a)pyrene, benzo(k)fluoranthene, chrysene, fluorene, and phenanthrene	UJ/J	low MS/MSD recoveries

The ability of the laboratory to accurately quantify anthracene, benzo(a)anthracene, benzo(k)fluoranthene, fluoranthene, fluorene, 1-methylnaphthalene, 2-methylnaphthalene, naphthalene, and phenanthrene in the samples listed above was not demonstrated, and the results have been qualified as estimated and flagged “J” on the data tables. High recoveries (< high laboratory limits%) were observed for these compounds in the associated MS and/or MSD analyses.

Field Duplicate

<u>Qualified Samples</u>	<u>Analyte(s)</u>	<u>Qualifier</u>	<u>Qualification</u>
SS-03-121422 and SS-03-121422-DUP	acenaphthene, anthracene, benzo[a]anthracene, benzo[a]pyrene, benzo[b]fluoranthene, benzo[g,h,i]perylene, benzo[k]fluoranthene, chrysene, dibenz(a,h)anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene, Pyrene, and fluoranthene	J	field duplicate imprecision

The ability of the laboratory to accurately quantify all PAH compounds, except acenaphthylene and naphthalene, in samples SS-03-121422 and SS-03-121422-DUP was not demonstrated, and the reported positive results for all PAH compounds, except acenaphthene, in these samples were flagged “J” on the data tables. A high field duplicate imprecision [RPD > 40% when both results were > 5x the RL or a difference greater than 2x RL when both results were < 5x RL] was observed between all PAH compound, except acenaphthylene and naphthalene, results in sample SS-03-121422 and its field duplicate SS-03-121422-DUP.

Complete support documentation for this organic QA review can be provided upon request.

B. Inorganic Review

The analyses of five soil and one SPLP aqueous field samples, not including QC samples, collected at the White Park site by Environmental Standards, were performed by Eurofins Lancaster. The samples were analyzed for metals by SW-846 Method 6020B and for mercury by SW-846 Method 7470A/7471B. The specific samples and analyses reviewed are identified on Table 1. Table 1 also presents the laboratory sample numbers, SDG numbers, matrices, collection dates, and parameters examined.

The findings offered in this report are based on a review of the holding times, condition of samples upon laboratory receipt, blank analysis results, initial and continuing calibrations, RL standard results, LCS results, MS/MSD results, internal standard results, laboratory and field duplicate results, analytical sequence, quantitation of positive results, and a critical evaluation of associated raw data. Any required data validation qualifications are presented on the qualified data tables presented in Section 2. Qualifiers provided by the laboratory were maintained within the data tables.

Issues are typically presented in two categories - deliverable issues and procedural issues. Deliverable issues are data issues that can easily be corrected and that may or may not impact the usability of the reported results. Procedural issues are issues that cannot be corrected and address method compliance issues; these issues may or may not impact the usability of the reported results. Comments address issues for which the data reviewer has provided information in order to clarify issues relating to the data; comments do not typically impact the usability of the reported results.

Overall, the data quality is acceptable. Procedural and reporting requirements were met for this data set. There were no comments/issues to address for this data set. Usability issues are addressed in the subsequent Inorganic Data Qualifiers section.

Inorganic Data Qualifiers

Based upon a Stage 4 review of the data packages provided, inorganic data qualification was warranted. The principal areas of concern are out-of-criteria MS/MSD recoveries, out-of-criteria post-digestion spike (PDS) recovery, laboratory duplicate imprecision, and results reported between the MDLs and RLs.

Data usability issues represent an interpretation of the QC results obtained for the project samples. Quite often, data qualifications address issues relating to sample matrix problems. Similarly, the validation guidelines specify areas of the data that require qualification, yet the methods used for analysis do not require any corrective action by the laboratory. Accordingly, the data usability issues should not necessarily be construed as an indication of laboratory performance.

The following inorganic data qualifiers are presented.

MS/MSD Accuracy and Precision:

<u>Qualified Samples</u>	<u>Analyte</u>	<u>Qualifier</u>	<u>Qualification</u>
SS-01-121422, SS-02-121422 SS-03-121422 SS-04-121422 SS-03-121422-DUP	lead	J	high MS/MSD recoveries
SPLP-2 (10-15)	mercury	UJ	low MS/MSD recoveries

The ability of the laboratory to accurately quantify lead in the samples listed above was not demonstrated, and the detected results have been estimated and flagged “J” on the qualified Form 1s. High recoveries (> 125%) were observed for arsenic in the associated MS/MSD analyses.

The ability of the laboratory to accurately quantify mercury in the sample listed above was not demonstrated, and the not-detected result have been estimated and flagged “UJ” on the qualified Form 1s. Low recoveries (< 80%) were observed for mercury in the associated MS/MSD analyses.

PDS Accuracy

<u>Qualified Samples</u>	<u>Analyte</u>	<u>Qualifier</u>	<u>Qualification</u>
SPLP-2 (10-15)	silver	UJ	low PDS recovery

The ability of the laboratory to accurately quantify silver in the sample listed above was not demonstrated, and the not-detected result for silver in these samples were flagged “UJ” on the qualified Form 1s. A low recovery (< 85%) was observed for silver in associated PDS analysis.

Laboratory Duplicate

<u>Qualified Samples</u>	<u>Analyte</u>	<u>Qualifier</u>	<u>Qualification</u>
SS-01-121422, SS-02-121422 SS-03-121422 SS-04-121422 SS-03-121422-DUP	lead	J	laboratory duplicate imprecision

The ability of the laboratory to accurately quantify lead in the samples listed above was not demonstrated, and the reported positive results for lead in these samples were flagged “J” on the data tables. A high RPD (> 40%) was observed for lead between the sample SS-01-121422 and its laboratory duplicate SS-01-121422 DUP.

Complete data support documentation of this inorganic and general chemistry QA review can be made available upon request.

C. Conclusions

Based upon review of the data packages provided, several organic results were qualified as “not-detected” due to blank contamination. Several organic results were qualified as estimated due to low LCS/LCSD recoveries, low MS/MSD recoveries, LCS/LCSD imprecision, and field duplicate imprecision. Several inorganic results were qualified estimated due to high MS/MSD recoveries, low MS/MSD recoveries, low PDS recovery, and laboratory duplicate imprecision. In addition, several organic and inorganic results were qualified as estimated for being reported between the MDL and RL.

To confidently use any of the analytical data within this sample set, the data user should understand the qualifications and limitations of the results.

The analytical data associated with the Parcel A – Southside Trail, White Park site in Morgantown, West Virginia, were determined to meet the DQOs of the project.

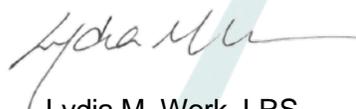
As qualified, data collected during the field sampling activities can be used to characterize the site as well as to prepare a residual human health and ecological risk assessment for the Site.

Report Prepared by,



Abigail P. Bossbaly
Quality Assurance Chemist

Report Reviewed by,



Lydia M. Work, LRS
Principal Chemist/Director of Operations
Project Manager

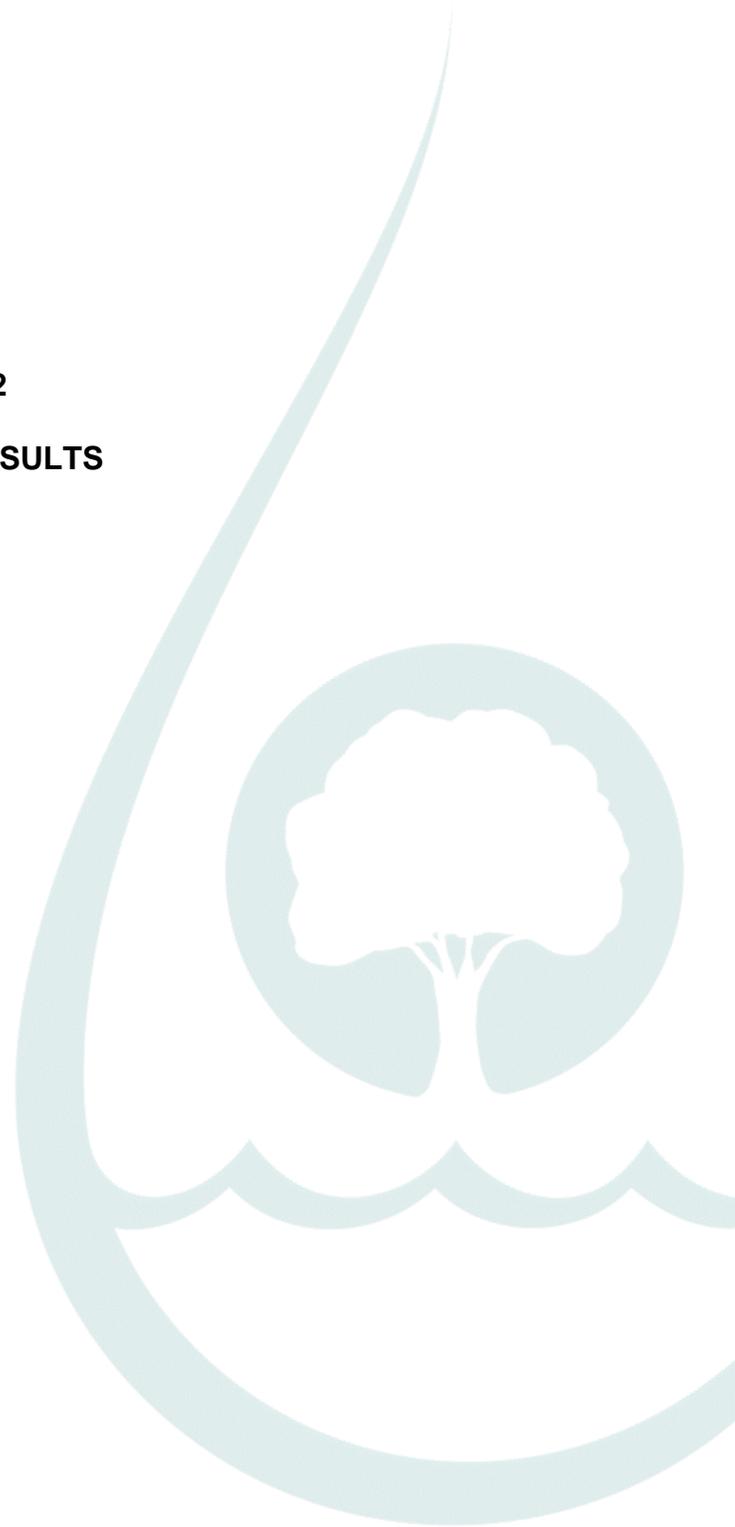
ENVIRONMENTAL STANDARDS, INC.

1140 Valley Forge Road
P.O. Box 810
Valley Forge, PA 19482-0810

(610) 935-5577

Date: 3/7/2023

SECTION 2
ANALYTICAL RESULTS



ORGANIC DATA QUALIFIER NOTES

- U* This compound should be considered “not-detected” because it was detected in a rinsate blank or laboratory method blank at a similar level.
- J Quantitation is approximate due to limitations identified during the data validation.
- R Unusable result; compound may or may not be present in sample.
- UJ This compound was not detected, but the quantitation limit may or may not be higher due to a bias identified during data validation.



INORGANIC DATA QUALIFIER NOTES

- U* This compound should be considered “not-detected” because it was detected in a rinsate blank or laboratory method blank at a similar level.
- J Quantitation is approximate due to limitations identified during the data validation.
- R Unusable result; compound may or may not be present in sample.
- UJ This compound was not detected, but the quantitation limit may or may not be higher due to a bias identified during data validation.



Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Date Collected: 12/14/22 11:05

Matrix: Solid

Date Received: 12/15/22 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	20.2		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-01-121422

Lab Sample ID: 410-109325-1

Date Collected: 12/14/22 11:05

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 79.8

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND	F1	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Acenaphthylene	ND	*- F1 cn JJ	2.1	0.42	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Anthracene	ND	*- F1 cn	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Benzo[a]anthracene	ND	*- F1 cn	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Benzo[a]pyrene	ND	*- F1 cn	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Benzo[b]fluoranthene	0.87	J	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Benzo[g,h,i]perylene	0.89	J	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Benzo[k]fluoranthene	ND	*- F1 cn JJ	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Chrysene	0.51	J* - F1 cn ✓ J	2.1	0.42	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Dibenz(a,h)anthracene	ND		2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Fluoranthene	ND	*- cn JJ	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Fluorene	ND	F1 JJ	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Indeno[1,2,3-cd]pyrene	0.84	J ✓	2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Naphthalene	ND		4.2	1.7	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Phenanthrene	ND	*- F1 cn JJ	2.9	1.2	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1
Pyrene	ND		2.1	0.83	ug/Kg	☼	12/27/22 09:42	12/28/22 06:55	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	55		22 - 152	12/27/22 09:42	12/28/22 06:55	1
Benzo(a)pyrene-d12 (Surr)	54		19 - 133	12/27/22 09:42	12/28/22 06:55	1
1-Methylnaphthalene-d10 (Surr)	53		26 - 123	12/27/22 09:42	12/28/22 06:55	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	8.9		0.44	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Barium	130	F1 ✓	0.44	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Cadmium	0.077	J	0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Chromium	24		0.44	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Lead	18	F1 J	0.22	0.083	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Selenium	0.34	J ✓	0.44	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2
Silver	ND		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:48	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.062	J ✓	0.072	0.024	mg/Kg	☼	12/17/22 14:10	12/19/22 17:36	1

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	25.0		1.0	1.0	%			12/17/22 09:07	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-02-121422

Lab Sample ID: 410-109325-2

Date Collected: 12/14/22 11:10

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 75.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	21		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Acenaphthylene	1.7	J *- cn	2.2	0.44	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Anthracene	48	*- cn	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[a]anthracene	76	*- cn	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[a]pyrene	58	*- cn	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[b]fluoranthene	70		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[g,h,i]perylene	29		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Benzo[k]fluoranthene	27	*- cn J	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Chrysene	70	*- cn J	2.2	0.44	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Dibenz(a,h)anthracene	9.7		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Fluoranthene	150	*- cn J	2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Fluorene	23		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Indeno[1,2,3-cd]pyrene	45		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Naphthalene	38		4.4	1.8	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Phenanthrene	150	*- cn J	3.1	1.3	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Pyrene	120		2.2	0.88	ug/Kg	☼	12/27/22 09:42	12/28/22 08:06	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	58		22 - 152				12/27/22 09:42	12/28/22 08:06	1
Benzo(a)pyrene-d12 (Surr)	57		19 - 133				12/27/22 09:42	12/28/22 08:06	1
1-Methylnaphthalene-d10 (Surr)	57		26 - 123				12/27/22 09:42	12/28/22 08:06	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13		0.43	0.14	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Barium	150		0.43	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Cadmium	0.43		0.11	0.043	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Chromium	29		0.43	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Lead	53	J	0.22	0.082	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Selenium	0.34	J	0.43	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2
Silver	ND		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:34	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.098		0.074	0.025	mg/Kg	☼	12/17/22 14:10	12/19/22 17:25	1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	33.0		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 67.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	5.9		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422

Lab Sample ID: 410-109325-3

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 67.0

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthylene	1.1	J *- cn J	2.5	0.49	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Anthracene	16	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[a]anthracene	40	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[a]pyrene	35	*- cn	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[b]fluoranthene	44		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[g,h,i]perylene	22		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Benzo[k]fluoranthene	16	*- cn J	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Chrysene	39	*- cn J	2.5	0.49	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Dibenz(a,h)anthracene	7.4		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Fluoranthene	76	*- cn ✓ J	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Fluorene	5.7		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Indeno[1,2,3-cd]pyrene	32	✓	2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Naphthalene	10		4.9	2.0	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Phenanthrene	55	*- cn J	3.4	1.5	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Pyrene	59		2.5	0.98	ug/Kg	☼	12/27/22 09:42	12/28/22 08:29	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	55		22 - 152				12/27/22 09:42	12/28/22 08:29	1
Benzo(a)pyrene-d12 (Surr)	52		19 - 133				12/27/22 09:42	12/28/22 08:29	1
1-Methylnaphthalene-d10 (Surr)	54		26 - 123				12/27/22 09:42	12/28/22 08:29	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	13	✓	0.59	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Barium	140		0.59	0.27	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Cadmium	0.17		0.15	0.059	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Chromium	32	✓	0.59	0.23	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Lead	110	J	0.30	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Selenium	0.43	J	0.59	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2
Silver	ND		0.15	0.060	mg/Kg	☼	12/19/22 03:49	12/30/22 19:32	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.11	✓	0.084	0.028	mg/Kg	☼	12/17/22 14:10	12/19/22 17:27	1

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	26.9		1.0	1.0	%			12/17/22 09:07	1

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 73.1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	17	J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Acenaphthylene	11	*- cn J	2.3	0.45	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-04-121422

Lab Sample ID: 410-109325-4

Date Collected: 12/14/22 12:55

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 73.1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	120	*- cn J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[a]anthracene	390	*- cn J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[a]pyrene	400	*- cn J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[g,h,i]perylene	340	J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Benzo[k]fluoranthene	200	*- cn J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Chrysene	350	*- cn J	2.3	0.45	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Dibenz(a,h)anthracene	84	J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Fluorene	26	J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Indeno[1,2,3-cd]pyrene	440	J	2.3	0.91	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Naphthalene	7.1	✓	4.5	1.8	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Phenanthrene	300	*- cn J	3.2	1.4	ug/Kg	☼	12/27/22 09:42	12/28/22 08:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	64		22 - 152				12/27/22 09:42	12/28/22 08:53	1
Benzo(a)pyrene-d12 (Surr)	64		19 - 133				12/27/22 09:42	12/28/22 08:53	1
1-Methylnaphthalene-d10 (Surr)	61		26 - 123				12/27/22 09:42	12/28/22 08:53	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzo[b]fluoranthene	620	J	23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10
Fluoranthene	1100	*- J	23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10
Pyrene	750	✓ J	23	9.1	ug/Kg	☼	12/27/22 09:42	12/28/22 12:01	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	75		22 - 152				12/27/22 09:42	12/28/22 12:01	10
Benzo(a)pyrene-d12 (Surr)	74		19 - 133				12/27/22 09:42	12/28/22 12:01	10
1-Methylnaphthalene-d10 (Surr)	73		26 - 123				12/27/22 09:42	12/28/22 12:01	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	7.4		0.44	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Barium	83		0.44	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Cadmium	0.099	J	0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Chromium	18	✓	0.44	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Lead	17	J ✓	0.22	0.083	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Selenium	0.47		0.44	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2
Silver	ND		0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:36	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.052	J	0.076	0.025	mg/Kg	☼	12/17/22 14:10	12/19/22 17:29	1

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture (EPA Moisture)	23.1		1.0	1.0	%			12/17/22 09:07	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Client Sample ID: SS-03-121422-DUP

Lab Sample ID: 410-109325-5

Date Collected: 12/14/22 11:15

Matrix: Solid

Date Received: 12/15/22 10:30

Percent Solids: 76.9

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	41	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Acenaphthylene	1.7	J *- cn J	2.1	0.43	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Anthracene	160	*- cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[a]anthracene	240	*- cn ✓ J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[a]pyrene	190	*- cn	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[b]fluoranthene	210	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[g,h,i]perylene	91	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Benzo[k]fluoranthene	94	*- cn J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Chrysene	200	*- cn J	2.1	0.43	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Dibenz(a,h)anthracene	34	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Fluorene	30	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Indeno[1,2,3-cd]pyrene	140	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Naphthalene	3.6	J	4.3	1.7	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Phenanthrene	370	*- cn J	3.0	1.3	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Pyrene	360	J	2.1	0.86	ug/Kg	☼	12/27/22 09:42	12/28/22 09:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	58		22 - 152				12/27/22 09:42	12/28/22 09:16	1
Benzo(a)pyrene-d12 (Surr)	54		19 - 133				12/27/22 09:42	12/28/22 09:16	1
1-Methylnaphthalene-d10 (Surr)	52		26 - 123				12/27/22 09:42	12/28/22 09:16	1

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - DL

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	600	*- J	21	8.6	ug/Kg	☼	12/27/22 09:42	12/28/22 12:25	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	70		22 - 152				12/27/22 09:42	12/28/22 12:25	10
Benzo(a)pyrene-d12 (Surr)	68		19 - 133				12/27/22 09:42	12/28/22 12:25	10
1-Methylnaphthalene-d10 (Surr)	65		26 - 123				12/27/22 09:42	12/28/22 12:25	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	17	✓	0.44	0.15	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Barium	130		0.44	0.20	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Cadmium	0.21	✓	0.11	0.044	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Chromium	29		0.44	0.17	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Lead	100	J	0.22	0.084	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Selenium	0.37	J	0.44	0.11	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2
Silver	ND		0.11	0.045	mg/Kg	☼	12/19/22 03:49	12/30/22 19:38	2

Method: SW846 7471B - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.085		0.078	0.026	mg/Kg	☼	12/17/22 14:10	12/19/22 17:31	1

Client Sample Results

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Client Sample ID: SPLP-2 (10-15)

Lab Sample ID: 410-109326-1

Date Collected: 12/14/22 13:15

Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.011	J *1 ✓	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Acenaphthylene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Anthracene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[a]anthracene	ND	*- *1 UJ	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[a]pyrene	ND	*- *1 UJ	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[b]fluoranthene	ND	*- *1 UJ	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[g,h,i]perylene	ND		0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Benzo[k]fluoranthene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Chrysene	ND	*1	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Dibenz(a,h)anthracene	ND		0.056	0.023	ug/L		01/03/23 08:38	01/03/23 17:33	1
Fluoranthene	ND	*- *1 UJ	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Fluorene	0.059	B *- *1 cn U*	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Indeno[1,2,3-cd]pyrene	ND	*1	0.056	0.023	ug/L		01/03/23 08:38	01/03/23 17:33	1
Naphthalene	0.11	B *1 cn ✓	0.079	0.034	ug/L		01/03/23 08:38	01/03/23 17:33	1
Phenanthrene	ND	*- *1 cn UJ	0.079	0.034	ug/L		01/03/23 08:38	01/03/23 17:33	1
Pyrene	0.012	J B *1 cn U*	0.056	0.011	ug/L		01/03/23 08:38	01/03/23 17:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Fluoranthene-d10 (Surr)	78		47 - 128				01/03/23 08:38	01/03/23 17:33	1
Benzo(a)pyrene-d12 (Surr)	76		10 - 110				01/03/23 08:38	01/03/23 17:33	1
1-Methylnaphthalene-d10 (Surr)	74		36 - 111				01/03/23 08:38	01/03/23 17:33	1

Method: SW846 6020B - Metals (ICP/MS) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND	F2	20	6.8	ug/L		12/30/22 05:05	12/30/22 22:35	1
Barium	14	J ✓	20	7.5	ug/L		12/30/22 05:05	12/30/22 22:35	1
Cadmium	ND		5.0	1.5	ug/L		12/30/22 05:05	12/30/22 22:35	1
Chromium	ND		20	3.3	ug/L		12/30/22 05:05	12/30/22 22:35	1
Lead	ND		5.0	0.71	ug/L		12/30/22 05:05	12/30/22 22:35	1
Selenium	ND		10	2.8	ug/L		12/30/22 05:05	12/30/22 22:35	1
Silver	ND	UJ	5.0	1.0	ug/L		12/30/22 05:05	12/30/22 22:35	1
Zinc	ND		100	40	ug/L		12/30/22 05:05	12/30/22 22:35	1

Method: SW846 7470A - Mercury (CVAA) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND	F1 UJ	0.20	0.079	ug/L		12/30/22 05:10	12/30/22 16:05	1

Client Sample ID: SPLP-1 (10-13.5)

Lab Sample ID: 410-109326-2

Date Collected: 12/14/22 13:55

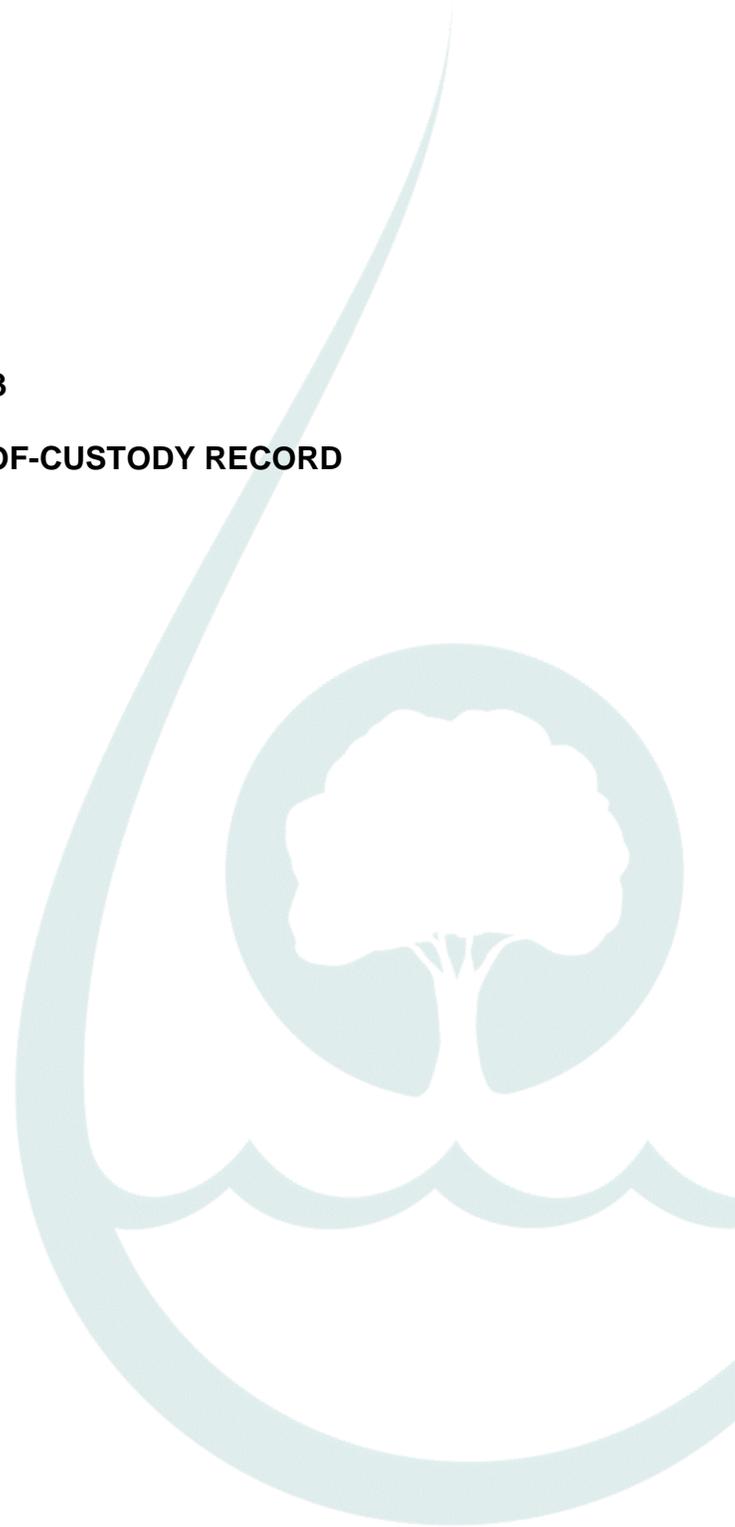
Matrix: Solid

Date Received: 12/15/22 10:30

Method: SW846 8270E SIM - Semivolatile Organic Compounds (GC/MS SIM) - SPLP East

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.055	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Acenaphthylene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Anthracene	0.031	J *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[a]anthracene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[a]pyrene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[b]fluoranthene	ND	*- *1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[g,h,i]perylene	ND		0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1
Benzo[k]fluoranthene	ND	*1	0.054	0.011	ug/L		01/03/23 08:38	01/03/23 18:38	1

SECTION 3
CASE NARRATIVE AND CHAIN-OF-CUSTODY RECORD



Job Narrative
410-109325-1

Receipt

The samples were received on 12/15/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

GC/MS Semi VOA

Method 8270E_SIM: The laboratory control sample (LCS) for preparation batch 410-330329 and analytical batch 410-330643 recovered outside control limits for the following analytes: Acenaphthylene, Anthracene, Benzo[a]anthracene, Benzo[a]pyrene, Benzo[k]fluoranthene, Chrysene, Fluoranthene and Phenanthrene. The associated sample(s) was re-prepared and/or re-analyzed within holding time but LCS associated with the re-extracted sample recovered outside control limits again. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109325-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-109325-1	SS-01-121422	Solid	12/14/22 11:05	12/15/22 10:30
410-109325-2	SS-02-121422	Solid	12/14/22 11:10	12/15/22 10:30
410-109325-3	SS-03-121422	Solid	12/14/22 11:15	12/15/22 10:30
410-109325-4	SS-04-121422	Solid	12/14/22 12:55	12/15/22 10:30
410-109325-5	SS-03-121422-DUP	Solid	12/14/22 11:15	12/15/22 10:30



Chain of Custody Record

410-109325 Chain of Custody

Sampler: K. MORTON	Lab PM: Weyandt, Barbara A	Carrier Tracking No(s):	COC No: 410-71881-21036.1
Phone: 814-449-0221	E-Mail: Barbara.Weyandt@et.euofins.us	State of Origin: PA	Page: Page 1 of 1

Lydia Work
 Company: Environmental Standards Inc. PWSID:
 Address: 1140 Valley Forge Road PO BOX 810
 City: Valley Forge
 State, Zip: PA, 19482-0810
 Phone: 814-449-0221(Tel)
 Email: lwork@envstd.com
 Project Name: White Park
 Site: **White Park WV**

Due Date Requested:	Analysis Requested	Job #:
TAT Requested (days):		
Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		
PO # Purchase Order not required		
WO #	Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Y - Trizma Z - other (specify)	
Project # 41013256		
SSOW#		
Other:		

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Total Number of Containers	Special Instructions/Note:
SS-01-121422	12/14/22	1105	G	S	Y	X	1	
SS-02-121422	12/14/22	1110	G	S	N	X	1	
SS-03-121422	12/14/22	1115	G	S	Y	X	1	
SS-04-121422	12/14/22	1255	G	S	Y	X	1	
SS-01-MS/MSD	12/14/22	1105	G	S	Y	X	2	
SS-03-121422-DUP	12/14/22	1115	G	S	Y	X	1	
SS-01-121422	12/14/22	1105	G	S	Y	X	1	
SS-02-121422	12/14/22	1110	G	S	N	X	1	
SS-03-121422	12/14/22	1115	G	S	Y	X	1	
SS-04-121422	12/14/22	1255	G	S	Y	X	1	

Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify)	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>[Signature]</i>	Date/Time: 12/12/22 1341	Company:	Received by: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Date/Time: 12/14/22 1740	Company: ES	Received by: <i>[Signature]</i>
Relinquished by: <i>[Signature]</i>	Date/Time:	Company:	Received by: <i>[Signature]</i>

Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		0.8 (0.5-2.2)

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 410-109325-1

Login Number: 109325

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable (</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable (</=6C, not frozen).	True	
WV: Container Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	

Job Narrative
410-109326-1

Receipt

The samples were received on 12/15/2022 10:30 AM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C

GC/MS Semi VOA

Method 8270E_SIM: The method blank for preparation batch 410-330362 and 410-331954 and analytical batch 410-332165 contained Fluorene above the method detection limit (MDL). Associated sample SPLP-5 (5-9.5) (410-109326-5) was not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8270E_SIM: Fluorene, Naphthalene, Phenanthrene and Pyrene was detected above the method detection limit and/or reporting limit in the method blank associated with preparation batch 410-330362 and 410-331954 and analytical batch 410-332165 as well as in the following samples: SPLP-2 (10-15) (410-109326-1), SPLP-1 (10-13.5) (410-109326-2), SPLP-3 (0.5-1) (410-109326-3), SPLP-4 (3-4) (410-109326-4), SPLP-5 (5-9.5) (410-109326-5) and SPLP-1-DUP (410-109326-6). All affected samples were re-extracted outside of holding time. Both sets of data have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: Environmental Standards Inc.
Project/Site: White Park

Job ID: 410-109326-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
410-109326-1	SPLP-2 (10-15)	Solid	12/14/22 13:15	12/15/22 10:30
410-109326-2	SPLP-1 (10-13.5)	Solid	12/14/22 13:55	12/15/22 10:30
410-109326-3	SPLP-3 (0.5-1)	Solid	12/14/22 14:30	12/15/22 10:30
410-109326-4	SPLP-4 (3-4)	Solid	12/14/22 15:00	12/15/22 10:30
410-109326-5	SPLP-5 (5-9.5)	Solid	12/14/22 14:55	12/15/22 10:30
410-109326-6	SPLP-1-DUP	Solid	12/14/22 13:55	12/15/22 10:30

Login Sample Receipt Checklist

Client: Environmental Standards Inc.

Job Number: 410-109326-1

Login Number: 109326

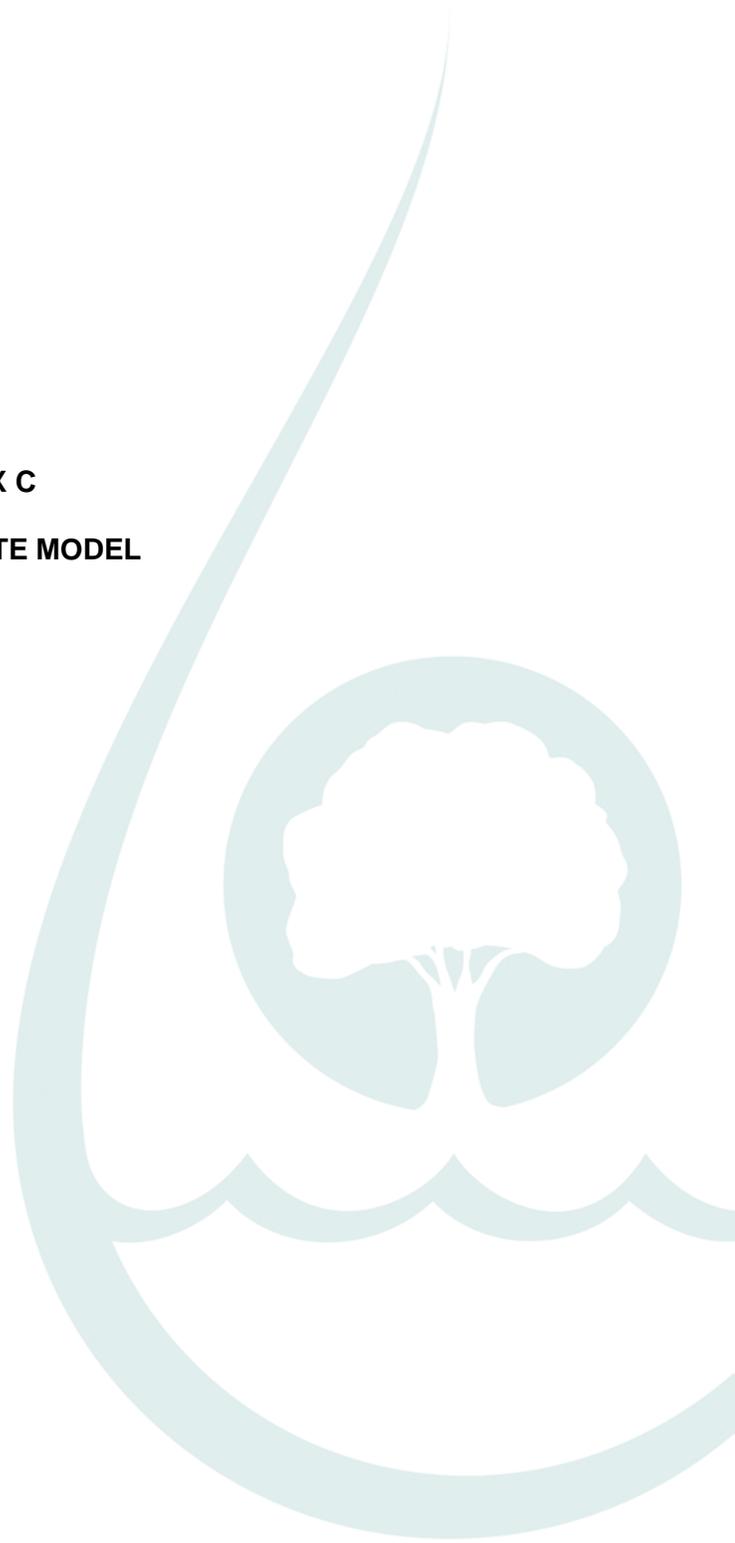
List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 1

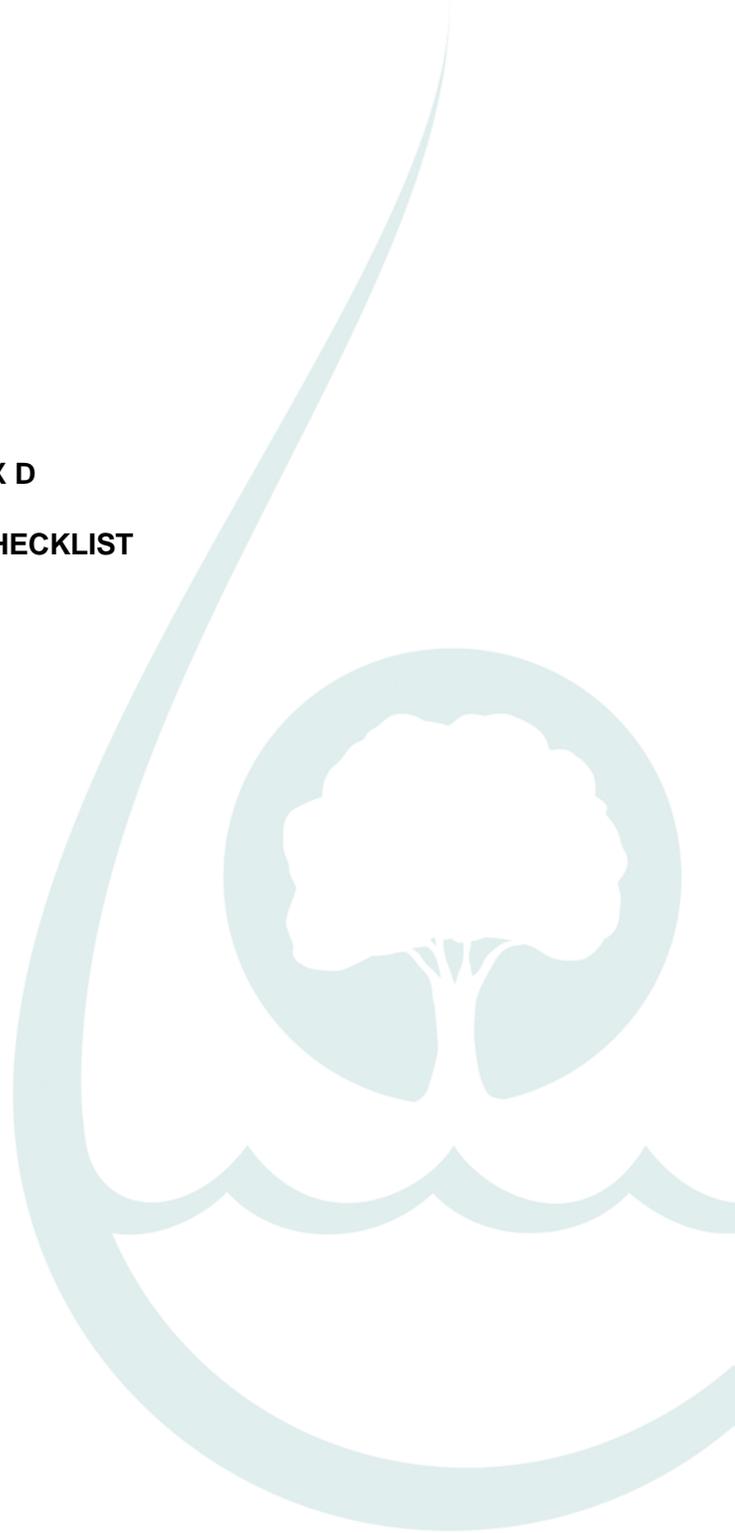
Creator: Leakway, Christian

Question	Answer	Comment
The cooler's custody seal is intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temperature is acceptable ($\leq 6^{\circ}\text{C}$, not frozen).	True	
WV: Container Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	True	
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace $>6\text{mm}$ in diameter (none, if from WV)?	N/A	

APPENDIX C
CONCEPTUAL SITE MODEL



APPENDIX D
ECOLOGICAL CHECKLIST



ATTACHMENT 2

Attachment 2: Checklist to Determine Applicable Remediation Standards

The Checklist to Determine Applicable Remediation Standards must be completed for each VRP site and attached to the Risk Assessment Report. Part 1 (Ecological Standards) is used to determine the degree to which ecological risks need to be addressed. Part 2 (Human Health Standards) is used to determine if a site should use De Minimis, Uniform, or Site-Specific risk assessment to progress the site in the VRP.

ATTACHMENT 2

Checklist to Determine Applicable Remediation Standards Part 1: Ecological Standards

STEP 1: Determine Whether a De Minimis Ecological Screening Evaluation is Appropriate for the Site		
1.1	Are there any undeveloped terrestrial areas on or adjacent to the site (e.g., areas that are not under intensive landscape or agricultural control)?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.2	Are there any potential wetlands (including vernal pools) on or adjacent to the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.3	Are there any surface water bodies (i.e., lotic or lentic habitat) on or adjacent to the site?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.4	Are there any terrestrial, wetland, or aquatic habitats off-site, but situated downstream, downwind, or downgradient from the site that may be affected by site-related stressors?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
1.5	Are there any projected land uses for the site that would result in undeveloped areas, wetland habitat, lotic habitat, or lentic habitat?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<p><i>If "Yes" to any: A complete exposure pathway may exist for potential ecological receptors of concern. Proceed to Step 2.</i> <i>If "No" to all: No further ecological evaluation is required. File this completed form with the Risk Assessment Report.</i></p>		

STEP 2: Identify any Readily Apparent Harm or Exceedances of Surface Water Quality Standards		
2.1	Have there been any incidents where harm to wildlife attributable to contaminants originating from the site has been readily apparent?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p><i>If "Yes": Proceed to Question 2.2.</i> <i>If "No": Skip to Question 2.3.</i></p>		
2.2	Has the cause of such harm been eliminated?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p><i>If "Yes": Briefly describe the action taken and complete the rest of the checklist.</i> <i>If "No": Proceed directly to the remedy evaluation or, alternately, proceed with a determination of a Uniform or Site-Specific Ecological Standard, as described in the VRP Guidance Manual, prior to implementation of the remedy. File this form with the Risk Assessment Report.</i></p>		
Action Taken:		
2.3	Is the site contributing to exceedances of surface water quality standards established for the protection of aquatic life (see W. Va. Legislative Rule 47CSR2)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p><i>If "Yes": Proceed directly to the remedy evaluation or, alternately, proceed with a determination of a Uniform or Site-Specific Ecological Standard, as described in the VRP Guidance Manual, prior to implementation of the remedy.</i> <i>If "No": Proceed to Step 3.</i></p>		

In 2018, a Site Inspection Reassessment was completed (Triad Engineering, Inc., Site Inspection Reassessment, White Park CERCLIS Site, July 2020), that included surface water quality samples. Metals, indicative of known upstream abandoned mine lands impacts, and not petroleum storage, were detected.

ATTACHMENT 2

STEP 3: Identify Contamination Associated with Ecological Habitats		
3.1	Have the environmental media (e.g., soil, surface water, sediment, biota) associated with the ecological habitat(s) identified in Questions 1.2 through 1.5 been sampled and analyzed with regard to potential site-related contaminants of concern?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
<i>If "Yes": Proceed to Question 3.2. If "No": Skip to Step 4.</i>		
3.2	Have any site-related contaminants been detected above natural background concentrations in environmental media collected from terrestrial habitat?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> n/a
3.3	Have any site-related contaminants been detected above natural background concentrations in environmental media collected from wetland or aquatic habitats (lotic or lentic habitats)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Unknown <input type="checkbox"/> n/a
<i>If "Yes" or "Unknown" to 3.2 and/or 3.3: Proceed to Question 3.4. If "No" or "n/a" to both 3.2 and 3.3: Skip to Question 3.6.</i>		
3.4	Are site-related contaminants presenting an ecological risk over and above "local" condition?	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown
<i>If "Yes": Skip to Step 4. If "No" or "Unknown": Proceed to Question 3.5.</i>		
3.5	Have site-related releases of contaminants been stopped?	<input type="checkbox"/> Yes <input type="checkbox"/> No
<i>If "Yes": Proceed to Question 3.6. If "No": Skip to Part 4.</i>		
3.6	Are site-related contaminants currently or likely to be migrating to aquatic habitat (e.g., lotic, lentic, or wetland habitat)?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> n/a
<i>If "Yes": Proceed to Step 4. If "No" or "n/a": No further ecological evaluation is required. File this completed form with the Risk Assessment Report.</i>		

Based on the soil data collected, including soil leachability, site-related contaminants are not likely to be migrating to aquatic habitats.

ATTACHMENT 2

STEP 4: Characterize the Potential Ecological Habitat

4.1	Describe the general land use in the immediate vicinity of the site.	
	<input checked="" type="checkbox"/> Commercial/Industrial <input type="checkbox"/> Residential <input type="checkbox"/> Rural/Agricultural <input checked="" type="checkbox"/> Rural/Undeveloped <input type="checkbox"/> Urban <input checked="" type="checkbox"/> Other: parks and trails	
4.2	For all affected areas that fulfill the descriptions in Step 1, answer the following and attach a site map identifying the potential ecological habitat.	
	4.2.1 Outline characteristics for potential terrestrial habitats.	
	Location:	
	Contiguous Area:	
	General Topography:	
	Primary Soil Type:	
	Predominant Vegetation Species:	
	4.2.2 Outline characteristics for potential wetland habitats (e.g., vernal pools, marshes, etc.).	
	Location:	
	Contiguous Area:	
	General Topography:	
	Primary Soil Type:	
	Predominant Vegetation Species:	
	1.2.3 Outline characteristics for potential lotic habitats (e.g., flowing water habitat such as rivers and streams).	
	Location:	
	Typical Width and Depth:	
	Typical Flow Rate:	
	Typical Gradient (m/km):	
	Type of River/Creek Bottom:	
	Types of Aquatic Vegetation Present:	
	Topography of the Riparian Zone:	
	Predominant Riparian Vegetation:	
	Human Utilization of Lotic Habitat:	
	Local Conditions:	
	1.2.4 Outline characteristics for potential lentic habitats (e.g., standing water habitats such as lakes and ponds).	
	Location:	Cobun Creek Reservoir
	Is the lentic habitat...?	<input type="checkbox"/> Natural <input checked="" type="checkbox"/> Man-made
	Area of Lentic Habitat	12.17 acre Freshwater Pond habitat
	Typical and Maximum Depth:	
	Description of Sources & Drainage:	
	Predominant Aquatic Vegetation:	
	Topography of Littoral Zone:	
	Predominant Littoral Zone Vegetation:	
	Human Utilization of Lentic Habitat:	Morgantown Water Supply
	Local Conditions:	

ATTACHMENT 2

4.3	<p>Indicate if the site contains or is adjacent to any of the following types of valued terrestrial habitats:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Climax Community (e.g., old growth forest) <input type="checkbox"/> Federal Wilderness Area (designated or administratively proposed) <input type="checkbox"/> National or State Forest <input type="checkbox"/> National or State Park <input type="checkbox"/> National or State Wildlife Refuge <input type="checkbox"/> National Preserve Area <input type="checkbox"/> State designated natural area <input type="checkbox"/> Federal land designated for protection of natural ecosystems <input type="checkbox"/> Federal or State land designated for wildlife or game management <input type="checkbox"/> Area utilized for breeding by large or dense aggregations of wildlife <input type="checkbox"/> Feeding, breeding, nesting, cover, or wintering habitat for migratory birds <input type="checkbox"/> Area important to the maintenance of unique biotic communities (e.g., high proportion of endemic species) <p><i>Threatened or Endangered Species</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Critical habitat for federally designated threatened or endangered species <input type="checkbox"/> Habitat known to be used or potentially used by Federal or State designated threatened or endangered species, or species in the State Wildlife Action Plan 	
4.4	<p>Indicate if the site contains or is adjacent to any of the following types of valued wetlands:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Area important to the maintenance of unique biotic communities (e.g., high proportion of endemic species) <input type="checkbox"/> Area utilized for breeding by large or dense aggregations of wildlife <input type="checkbox"/> Spawning or nursery areas critical to the maintenance of fish/shellfish species <input type="checkbox"/> Feeding, breeding, nesting, cover, or wintering habitat for migratory waterfowl or other aquatic birds <input type="checkbox"/> Area important to the maintenance of unique biotic communities (e.g., high proportion of endemic species) <p><i>Threatened or Endangered Species</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Critical habitat for federally designated threatened or endangered species <input type="checkbox"/> Habitat known to be used or potentially used by Federal or State designated threatened or endangered species, or species in the State Wildlife Action Plan 	
4.5	<p>Indicate if the site is within or adjacent to any of the following valued aquatic habitats:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Federal or State Fish Hatchery <input type="checkbox"/> Federal or State designated Scenic or Wild River <input type="checkbox"/> National River Reach designated as recreational <input type="checkbox"/> Critical areas identified under the Clean Lakes Program <input type="checkbox"/> Trout-stocked streams or wild trout streams with verified trout production <input type="checkbox"/> Spawning or nursery areas critical the maintenance of fish/shellfish species <input type="checkbox"/> Feeding, breeding, nesting, cover, or wintering habitat for migratory waterfowl or other aquatic birds <input type="checkbox"/> Area important to the maintenance of unique biotic communities (e.g., high proportion of endemic species) <p><i>Threatened or Endangered Species</i></p> <ul style="list-style-type: none"> <input type="checkbox"/> Critical habitat for federally designated threatened or endangered species <input type="checkbox"/> Habitat known to be used or potentially used by Federal or State designated threatened or endangered species, or species in the State Wildlife Action Plan 	
4.6	<p>Have valued terrestrial, wetland, or aquatic habitats been identified within or adjacent to this site? <i>(A list of agencies that can provide information that should assist in determining whether the site is located within or adjacent to the areas listed in 4.3, 4.4, and 4.5 is provided at the end of this checklist.)</i></p>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>STEP 5: Identify Any Potential Ecological Receptors of Concern</p>		
5.1	<p><u>Threatened and Endangered Species</u></p>	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

ATTACHMENT 2

	<p>Were any potential habitats within or adjacent to the site identified as critical habitat for federally designated threatened or endangered species listed in 50CFS17.95 or 17.96, or areas known to be used by federal or state designated threatened or endangered species?</p>	
	<p>If “Yes”, indicate which species*:</p> <p><i>Amphibians</i></p> <p><input type="checkbox"/> Cheat Mountain salamander (Plethodon nettingi)</p> <p><i>Birds</i></p> <p><input type="checkbox"/> Bald eagle (Haliaeetus leucocephalus)</p> <p><i>Clams</i></p> <p><input type="checkbox"/> Clubshell (Pleurobema clava)</p> <p><input type="checkbox"/> Fanshell (Cyprogenia stegaria)</p> <p><input type="checkbox"/> James spiny mussel (Pleurobeam collina)</p> <p><input type="checkbox"/> Northern riffleshell (Epioblasma torulosa rangiana)</p> <p><input type="checkbox"/> Pink mucket pearl mussel (Lampsilis abrupta)</p> <p><input type="checkbox"/> Tubercled blossom pearl mussel (Epioblasma torulosa torulosa)</p> <p><i>Flowering Plants</i></p> <p><input type="checkbox"/> Harperella (Ptilimnium nodosum)</p> <p><input type="checkbox"/> Northeastern bulrush (Scirpus ancistrochaetus)</p> <p><input checked="" type="checkbox"/> Running buffalo cover (Trifolium stoloniferum)</p> <p><input type="checkbox"/> Shale barren rock cress (Arabis perstellata)</p> <p><input type="checkbox"/> Small whorled pogonia (Isotria medeoloides)</p> <p><input type="checkbox"/> Virginia spiraea (Spiraea virginiana)</p> <p><i>Mammals</i></p> <p><input type="checkbox"/> Eastern cougar (Felis concolor couguar)</p> <p><input type="checkbox"/> Gray bat (Myotis grisescens)</p> <p><input checked="" type="checkbox"/> Indiana bat (Myotis sodalis)</p> <p><input type="checkbox"/> Virginia big-eared bat (Corynorhinus townsendii virginiaus)</p> <p><input type="checkbox"/> Virginia northern flying squirrel (Glaucomys sabrinus fuscus)</p> <p><i>Snails</i></p> <p><input type="checkbox"/> Flat-spined three-toothed land snail (Triodopsis platysayoides)</p>	
5.2	<p><u>Local Populations Providing Important Natural or Economic Resources, Functions, and Values</u></p> <p>Were any valued terrestrial, wetland, or aquatic habitats listed in 4.3, 4.4, or 4.5 identified within or adjacent to the site?</p>	<p><input type="checkbox"/> Yes <input checked="" type="checkbox"/> No</p>
<p><i>If “Yes” to 5.1 and/or 5.2 and/or surface water bodies are not in compliance with applicable water quality standards: The site does not pass the De Minimis ecological risk screening, since a complete exposure pathway may exist for potential ecological receptors of concern. Further evaluation of the site is required using either the Uniform Ecological Standard or the Site-Specific Ecological Standard.</i></p> <p><i>If “No” to 5.1 and 5.2 and surface water bodies are in compliance with applicable water quality standards: No further ecological evaluation is required. File this completed form with the Risk Assessment Report.</i></p>		

*The list contains those federally designated threatened and endangered species that are indigenous to WV. WVDNR, Wildlife Resources Section should be consulted to ensure the list is correct. WV has not established a list of state designated threatened or endangered species; however, the WVDNR has developed a [“Species of Greatest Conservation Need” list](#) in the [State Wildlife Action Plan](#). Species listed in the in the State Wildlife Action Plan should also be considered in any Ecological Risk Assessment.

ATTACHMENT 2

Federal and State Agencies for Ecological Review Consultation

U.S. Department of Agricultural – Natural Resources and Conservation Service
1550 Earl L. Core Road, Suite 200
Morgantown, WV 26505
304-284-7540
<https://www.nrcs.usda.gov/wps/portal/nrcs/site/wv/home>

U.S. Fish and Wildlife Service – WV Field Office
Ecological Services
90 Vance Drive
Elkins, WV 26241
304-636-6586
<https://www.fws.gov/northeast/ecologicalservices/index.html>

WV Division of Forestry
7 Players Club Drive
Charleston, WV 25311
304-558-2788
<https://wvforestry.com/>

WV Division of Natural Resources
Building 74
324 Fourth Avenue
South Charleston, WV 25303
304-558-2754
<http://www.wvdnr.gov/>

WV Division of Natural Resources – Wildlife Resources Section
Building 74
324 Fourth Avenue
South Charleston, WV 25303
304-558-2771
<http://www.wvdnr.gov/>

ATTACHMENT 2

Checklist to Determine Applicable Remediation Standards Part 2: Human Health Standards

STEP 1: Determine Whether the De Minimis Standard is Appropriate for the Site

The De Minimis Standard applies to contaminants for which the primary exposure routes will be ingestion, dermal contact, and/or inhalation of soil or groundwater. For soil, the De Minimis Standard is either the risk-based concentration (RBC) (Table 60-3B of the Rule) or the natural background level of the contaminant, whichever is higher. The potential for vapor intrusion also needs to be screened by comparing site groundwater, soil gas, or indoor air concentrations to the relevant RBC in the USEPA Vapor Intrusion Screening Levels (VISL).

Evaluating a site based on the De Minimis Standard consists of aggregating site data and comparing either maximum concentrations detected, or the 95% upper confidence limit (UCL) concentration, known as the exposure point concentration (EPC), to establish RBCs. If site EPCs do not exceed the RBC or site-specific background, then no further evaluation or remediation of the site is required. Similarly, if the site EPCs do exceed the RBC or site-specific background but presumptive remedies can be shown to sever the potential exposure route, then no further evaluation is needed, and the Applicant can proceed to implementing the presumptive remedies. (Completing Worksheet 4-1 at the end of this checklist may aid in this process.)

The De Minimis approach is limited to particular compounds and is appropriate only for residential or industrial exposure scenarios. Below are several questions that will help to determine whether a site may be evaluated under the De Minimis Standard.

1.1	Have media representing all potentially complete pathways in the conceptual site model been sampled?	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.2	Are there fewer than 10 chemicals present at the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.3	If any concentration of chemicals of potential concern exceed the RBC, are there presumptive remedies that can sever the exposure pathways and that are acceptable to the Applicant and impacted off-site property owners?	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.4	Is the future use of the site expected to only be residential and/or industrial?	<input type="checkbox"/> Yes <input type="checkbox"/> No
1.5	Does Part 1 (Ecological Standards) of this checklist indicate that there are no ecological receptors of concern at the site (e.g., wetlands or endangered species)?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If "Yes" to all: The De Minimis Standard is likely appropriate for the site.

If "No" to any: The De Minimis Standard may not be appropriate for the site, and more site-specific characterization may be needed; however, the Applicant may consult with WVDEP to confirm the determination.

If "No" to all: The De Minimis Standard is not appropriate for the site. The Uniform Standard or Site-Specific Standard should be considered instead.

ATTACHMENT 2

STEP 2: Determine Whether the Uniform Standard is Appropriate for the Site

The Uniform Standard is based on the use of WVDEP-approved methodologies to calculate remediation standards. Advantages to using the Uniform Standard include the fact that this methodology can be used to determine remediation standards for some contaminants and receptors not included under the De Minimis Standards or De Minimis Risk Assessment process (e.g., recreators and construction workers), and that, with adequate documentation, site-specific information can be incorporated into the calculations. The disadvantages of the approach defined under the Uniform Standard are that exposure scenarios and potential exposure pathways included in these calculations are limited to those available in the USEPA Regional Screening Levels methodology.

Note that if site-specific modeling will be used in determining EPCs for media at a site, a site-specific risk assessment should be used.

2.1	Is future use of the site potentially other than residential or industrial use?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.2	Do potentially impacted sediments exist at the site that you feel should not be held to residential or industrial soil cleanup standards?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.3	Do home vegetable gardens potentially exist in the vicinity of the site, and is homegrown produce potentially impacted by site-related chemicals?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.4	Are there any dairy farms or livestock grazing areas within the area of impact of the site?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.5	Is impacted groundwater or surface water used for irrigation or any use other than drinking water?	<input type="checkbox"/> Yes <input type="checkbox"/> No
2.6	Are construction/utility workers potentially exposed to contaminated groundwater in a trench?	<input type="checkbox"/> Yes <input type="checkbox"/> No

If "Yes" to any: There are potential pathways for human exposure to site-related chemicals that are not addressed in the methodology provided for determining a Uniform Standard. Therefore, a Site-Specific Standard is more appropriate for the site.

If "No" to all: The Uniform Standard is likely appropriate for the site.

ATTACHMENT 2

Worksheet 4-1

If EPCs for all site contaminants are less than the corresponding RBC values, no remediation is required. If the site EPC values exceed the RBC values, additional assessment or remediation of the site is required.

Worksheet 4-1: Compare Site Data to Chemical Specific De Minimis RBC Values					
Soil (mg/kg)	Contaminant	Max Concentration	UCL	RBCs	
				Residential	Industrial
Groundwater µg/L	Contaminant	Max Concentration	UCL	RBCs	
				Groundwater	VISL
Soil Vapor µg/m³	Contaminant	Max Concentration	UCL	RBCs	
				Residential	Industrial

UCL = 95% Upper Confidence Level
RBC = Risk Based Concentrations provided in Table 60-3B of the Rule and in the USEPA Vapor Intrusion Screening Levels (VISL)