Trip Report – February 2020 Sampling Event
Removal Assessment

Weirton BOP Implosion Site
Weirton, Hancock County, West Virginia

EPA Region III

START V - West

Superfund Technical Assessment and Response Team

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1.0 INTRODUCTION

TechLaw was tasked by the U.S. Environmental Protection Agency (EPA) Region III On-Scene Coordinator (OSC) to conduct a Removal Assessment at the Weirton BOP Implosion site (Site) located in Weirton, Hancock County, West Virginia. On-site investigation activities were conducted during November 2019 and February 2020. These activities included an initial Site reconnaissance followed by surface soil sampling conducted in accordance with the approved Sampling QA/QC Work Plan (SQAP) dated January 23, 2020 (TechLaw, 2020). This report provides a summary of the Site reconnaissance and sampling investigation activities and associated laboratory analytical results. The sampling activities were conducted by TechLaw under EPA Superfund Technical Assessment and Response Team (START) – West contract EP-S3-15-03, Technical Direction Document (TDD) No. T501-19-11-001.

2.0 SITE DESCRIPTION

The Site comprises the residential and commercial properties to the north, east and south of the former Basic Oxygen Plant (BOP) located on the Frontier, Mingo Junction Steel Works, LLC property in Weirton, WV. Prior to its implosion, the BOP was a large structure situated on a 16.4-acre parcel of land that was located approximately 1000 feet south-southeast from the intersection of WV State Route 2 (SR2) and Pennsylvania Avenue (SR105) in Weirton, WV. The BOP location is bound to the north by Terrace Circle, to the east by residential homes along Weir Avenue, to the south by the Steel Works facility, and to the west by SR2. Coordinates for the approximate center of the BOP facility are 40.414848 degrees (°)north latitude and -80.587102° west longitude (Google Earth Pro© - refer to Figure 1, Site Location Map and Figure 2, Site Aerial Map).

On March 9, 2019, the final phase of the BOP demolition project was conducted by the owner who had the remaining structure demolished by means of a scheduled implosion. The implosion caused a large dust cloud and resulted in deposition of particulate matter on nearby residential and commercial properties to the east. Evaluation of surface soil on these off-site properties was the primary objective of this investigation. The BOP location and the approximate investigation area are depicted in Figure 2, Site Aerial Map. The area evaluated consists primarily of residential properties and some mixed-use commercial properties located adjacent to and north and east of the BOP, and which is along and in the vicinity of Weir Avenue and Pennsylvania Avenue. Several background samples were collected to the northwest, southwest and south of the BOP to establish attribution of contaminants where the potential for multiple contaminant contributors may exist.

The former BOP facility is located on a broad, relatively flat valley floor that was a former channel of the Ohio River. The investigation area is upslope from the BOP facility and approximately 25-100 feet higher elevation. The elevation of the valley floor is approximately 730 feet above mean sea level (amsl). The upland areas bounding the east and west sides of the valley are approximately 1170 feet amsl. Steeply sloped stream-dissected hillsides are present throughout the area and are indicative of the topography of the Allegheny Plateau zone of the Appalachian Plateau region.

3.0 BACKGROUND

The basic oxygen steel making process is a method of primary steel-making where carbon-rich pig iron is made into steel. The process of blowing oxygen through the pig iron lowers the carbon content within the iron and changes it to low-carbon steel. The process is known as basic, from the fluxes of burnt lime or dolomite chemical bases, which are added to aid with the removal of impurities and protect the converter lining.

Refer to the *Preliminary Investigation Report Corrective Action Area VI Iron-Making And Corrective Action Area VII Steel-Making*, (Preliminary Investigation Report) prepared by Civil and Environmental Consultants, Inc. (CEC, 2015) for a presentation of historical Site ownership and previous investigations of the Site. The CEC report figures referencing locations of solid waste management units (SWMUs) and areas of concern (AOCs) were unavailable during the background file review. SWMUs described in the Preliminary Investigation Report include the former yard office locomotive fueling station (W-700), detinning plant (W-1000, 1002, and 1007), sludge transfer station (W-1000), and air compressor condensate drip at detinning plant (W-1007).

Weirton Steel Corporation (WSC) received an initial administrative order, on September 16, 1996, under section 3008(h) of the Resource Conservation and Recovery Act (RCRA) from EPA to perform RCRA corrective actions at WSC's steel manufacturing facility located in Weirton, WV. The order became final on October 16, 1996 and specified that WSC perform a RCRA Facility Investigation (RFI). Following several revised submissions, WSC submitted a facility-wide RFI Work Plan to EPA that was approved on July 20, 1999. The RFI Work Plan divided the large complex site (1,390 acres) into 12 Corrective Action Areas (CAAs) to implement the RFI and corrective actions. The BOP building is located in CAA VII as indicated in the CEC Preliminary Investigation Report.

The Weirton BOP was operated by WSC prior to May 17, 2004 when International Steel Group, Inc. (ISG) purchased the majority of WSC's assets including the parcels that made up CAA VI (Iron-Making Area) and VII (Steel-Making Area) which included the BOP. Operations began at the facility on May 18, 2004 under the name of ISG Weirton, Inc., as a subsidiary of ISG. In April 2005, Mittal Steel N.V. (Mittal) acquired ISG. In 2006, Mittal merged with Arcelor to form ArcelorMittal, Inc. From 2006 to 2012, the facility was operated by ArcelorMittal Weirton, Inc., a subsidiary of ArcelorMittal USA, Inc. On December 31, 2012, ArcelorMittal Weirton, Inc. converted to a limited liability company and the name was changed to ArcelorMittal Weirton LLC (CEC 2015).

The RFI Work Plan for CAAs VI and VII was submitted to the U.S. EPA on June 26, 2013. A revised work plan was approved by EPA on September 19, 2013. CEC conducted field investigations from October to December 2013. A total of 17 soil borings (SBs) were installed in CAAs VI and VII. One SB was installed in CAA VI. Sixteen SBs were installed in CAA VII. A total of 9 groundwater monitoring wells (GMWs) were installed in CAAs VI and VII. These included three GMWs that were installed in CAA VI and six GMWs that were installed in CAA VII.

CEC indicated that the constituents of potential concern (COPCs), related to the (SWMUs and AOCs identified in the Preliminary Investigation Report, include volatile organic compounds (VOCs), primarily monocyclic aromatic hydrocarbons and halogenated aliphatics; semi-volatile

organic compounds (SVOCs), primarily phenols and polynuclear aromatic hydrocarbons (PAHs); polychlorinated biphenyl (PCBs); metals; and cyanide (CEC 2015). Results from the preliminary investigation were compared with the residential and industrial EPA Regional Screening Levels (RSLs) for soil that were current at the time of the CEC report (January 2015). Surface soil was compared to the RSL for residential soil based on a future redevelopment scenario. Subsurface soil was compared to the RSL for industrial soil.

Surface soil samples collected as part of the CEC Preliminary Site Investigation conducted in 2015 were analyzed for select VOCs and SVOCs, including 17 (PAHs) and Target Analyte List (TAL) Metals plus cyanide, and PCBs. Analytical results indicated there were no VOCs detected in surface soil samples that exceeded the residential RSLs for soils.

The CEC Preliminary Investigation Report indicates at least seven surface soil sample locations are associated with the BOP building area. The sample identifiers (IDs) are VII-SS-11, 12, 13, 18, 19, 20 and 21. These sample locations are described in Table 5-1 of the CEC Preliminary Investigation Report. The COCs identified in the report as exceeding the RSL for residential soil (surface soil) include PAHs and metals as follows:

- Benzo(a)anthracene with analytical results ranging from 0.013 milligrams per kilogram (mg/kg) to 0.17 mg/kg. Two of the seven samples exceeded the residential soil RSL of 0.15 mg/kg;
- Benzo(a)pyrene with analytical results ranging from 0.0082 mg/kg to 0.18 mg/kg. Six of the seven samples exceeded the residential soil RSL of 0.015 mg/kg;
- Benzo(b)flouranthene with analytical results ranging from 0.013 mg/kg to 0.2 mg/kg. Two of the seven samples exceeded the residential soil RSL of 0.15 mg/kg;
- Dibenz(a,h)anthracene with analytical results ranging from 0.0081 mg/kg to 0.052 mg/kg. Three of the seven samples exceeded the residential soil RSL of 0.015 mg/kg;
- Arsenic with analytical results from 0.75 mg/kg to 5.6 mg/kg. Six samples (SVII-SS-18 was not sampled for TAL metals) exceeded the residential soil RSL of 0.67. Four of the six samples exceeded the industrial soil RSL of 3 mg/kg.

A detailed description of RCRA sampling activities and analytical results can be found in the CEC Preliminary Investigation Report.

More recent activity showed that the BOP parcel was sold to Frontier Industrial Corporation in January 2017. During 2017-2018, an asbestos survey and removal was conducted at the BOP. On June 9, 2018, BOP demolition and teardown began. On March 9, 2019, remaining Sections 14, 15, and 16 of the BOP were demolished via implosion. The implosion caused a large dust cloud that resulted in deposition of particulate matter on nearby residential and commercial properties predominantly to the east of the BOP. On March 11, 2019, a sample of the dust material deposited from the implosion was collected by a chemist and analyzed at a commercial laboratory for inductively coupled plasma-atomic emission spectrometry (ICP-AES) metals, mercury and hexavalent chromium. The results indicated the presence of arsenic, cadmium, lead, and mercury within the dust sample at concentrations of potential concern (Sellitti, 2019). On July 10, 2019, a lawsuit was filed in Hancock County WV Court representing residents of 23 households in Weirton due to alleged hazards and property damage resulting from the implosion.

The West Virginia Department of Environmental Protection (WVDEP) subsequently requested EPA assistance with evaluating surface soils on nearby properties for contaminants of concern related to the implosion.

4.0 INVESTIGATION ACTIVITIES

TechLaw performed the following activities as part of this investigation: prepared a Health and Safety Plan (HASP); conducted a site reconnaissance; developed a geographical information system (GIS) database for the Site; acquired parcel maps; prepared the SQAP; arranged for analytical services; developed a SCRIBE™ database for the Site; conducted a sampling event that included collection of surface soil samples; shipped samples to assigned and/or procured laboratories; managed environmental data; evaluated sample results; and prepared this report.

The following paragraphs summarize the investigation and sampling activities conducted at the Site and provide a brief synopsis of the analytical results. Site and sample location maps, a sample log, data summary tables, chain-of-custody's (COCs), data validation reports and a photolog are attached at the end of this report.

4.1 Site Reconnaissance

On the morning of November 26, 2019, two EPA On-Scene Coordinators and three START personnel held a meeting at the TechLaw office in Wheeling, WV to discuss the project scope, objectives and schedule. Following the meeting, all personnel mobilized to the Site and conducted a Site reconnaissance to evaluate potential sampling locations in the area of interest near the BOP implosion site. The reconnaissance activities included reviewing property parcels identified by EPA based on their proximity to the implosion site and accessibility. The parcels evaluated were owned by the City of Weirton and included open vacant lots, wooded lots, playgrounds, a small park, and a parcel containing a fenced pump house station. Most of these locations were within the residential neighborhood along Weir Avenue east of the BOP that received significant deposition of particulates from the BOP implosion that took place 8.5 months earlier. Video footage of the implosion taken by media outlets and others was readily available on the internet for viewing and showed the large dust cloud envelope the neighborhood on Weir Avenue including the lots identified for potential sampling activities. START took photos and obtained global positioning system (GPS) coordinates at the property locations to support preparation of the SQAP then demobilized from the Site.

4.2 Planning and Pre-Mobilization Activities

During interim planning and SQAP development activities that took place during December 2019 and January 2020, EPA identified 13 additional privately owned lots that were within the Weir Avenue investigation area for sampling purposes. TechLaw provided to the OSC parcel ownership information and parcel maps obtained from the Hancock County Assessor's Office on-line service. This was to assist EPA's efforts with obtaining owner access agreements to conduct the sampling activities. The additionally identified privately owned vacant lots were located in areas directly across from, due east of, and downwind of the BOP implosion location.

A property access agreement for the 13 privately owned parcels was signed by the owner on January 20, 2020. The access agreement for 11 properties owned by the city of Weirton was signed on January 21, 2020.

TechLaw START prepared a Draft SQAP to outline sampling procedures for collecting surface soil samples (TechLaw, 2020). The SQAP specified analytical parameters and project quality control/quality assurance (QA) procedures to be used during the sampling event. TechLaw prepared a draft Analytical Request Form (ARF) and submitted it along with the SQAP to the OSC for review and approval on January 9, 2020. The SQAP was revised to address EPA comments received on January 23, 2020 and TechLaw submitted the final SQAP on the same date to the OSC. The approved SQAP and ARF were submitted to the EPA Region III Office of Analytical Services and Quality Assurance (OASQA) Client Services Team (CST) on January 24, 2020 to arrange for analytical services. The CST scheduled analytical services for the project through the Contract Laboratory Program (CLP) Routine Analytical Services (RAS) and Delivery of Analytical Services (DAS), and requested Tier IV laboratory services be procured by TechLaw for Asbestos analysis. Case numbers and laboratory assignments were provided by the CST to TechLaw on February 5, 2020. TechLaw prepared a scope-of-work (SOW) and request for quote (RFQ) and solicited bids from laboratories capable of performing the asbestos analysis. EMSL Analytical, Inc., Cinnaminson, NJ was subcontracted by TechLaw to conduct the work. The following case numbers, analytical parameters and laboratory assignments were provided to TechLaw by the EPA CST:

1. **CLP Case No. 48747**: For analyses of surface soil samples and a rinsate blank for TAL metals (total) and mercury (Hg). The analyses were assigned by the CST to Bonner Analytical Testing Company, Hattiesburg, MS.
2. **DAS Case No. R35756**: For analysis of surface soil samples and a rinsate blank for hexavalent chromium. The analysis was assigned by the CST to the EPA Region 3 OASQA Laboratory, Fort Meade, MD.
3. **DAS Case No. R35754** (Tier IV): For analyses of surface soil samples for asbestos containing materials (ACMs). TechLaw procured analytical services for asbestos with EMSL Analytical, Inc. – Cinnaminson, NJ Laboratory.

On January 31, 2020, the OSC provided TechLaw with the signed access agreements for properties to be sampled. TechLaw updated sample location parcel maps to include the properties where access was granted. The SCRIBE™ database was prepared to output sample tags, labels, and Chain-of-Custody (COC) records; and to use for data management. TechLaw procured sampling materials and supplies and rented a Trimble® Geo 7X handheld GPS unit to collect coordinates at the sample locations.

During the week of February 17, 2020 and prior to the sampling event, EPA handed out postcards to citizens in the area of the investigation that provided information related to EPA's activities being conducted at the Site and pertinent EPA contact information.

4.3 Field Sampling Activities

On February 19, 2020, prior to mobilization to the Site, TechLaw collected a rinsate blank (RB-01) from the dedicated trowels to be used during the sampling event. The blank sample was collected by pouring deionized ultra-filtered water (DIUF) over the trowels to be used for sampling and collecting the water in sample containers and storing the sample in a cooler on ice. After collection of the rinsate blank, TechLaw START mobilized three personnel to the Site to conduct sampling activities. EPA OSC's Deborah Lindsey and Samantha Holtzinger were

present for the duration of the sampling event.

TechLaw collected a total of 19 biased, discrete (grab) surface soil samples including two duplicate samples from 17 locations on the Site. The sampling locations were on eight City-owned properties and nine privately-owned properties for which access had been granted by the property owners. Three of the locations on City-owned property were selected as background locations (SS-17, SS-18, SS-19). Soil samples were identified as SS-01 through SS-19 and were numbered in the chronological sequence that they were collected. The sample locations are depicted on Figure 3, Sample Location Map.

All surface soil samples were collected from 0-3 inches depth using dedicated stainless steel trowels and in accordance with the procedures outlined in the SQAP. Soil samples were placed in dedicated aluminum pans and thoroughly homogenized. Stones, vegetation and debris were removed prior to filling certified-clean sample containers. Each sample location was photographed and described in the Site logbook. General physical descriptions of the soil were documented. Sample coordinates were collected with the Trimble® GPS data collector. Sample containers were marked with the sample identifier, placed in a plastic zipping bag and stored in a cooler on ice until the samples were processed for shipping. Weather during the event was partly cloudy with temperatures ranging from 26º Fahrenheit (F) in the morning to 39º F in the afternoon. Winds were out of the northwest at 5-10 mph.

Areas of particulate deposition attributed to the BOP implosion dust cloud were not directly observed by the sampling team either on the ground surface at the sampling locations, or on the parcels in general. The lack of observed particulate deposition was likely attributable to weathering over the 8.5 months period between the implosion date and sampling date. Wind, precipitation, infiltration and runoff would be factors contributing to the lack of observed surficial deposition of particulate fallout. The sampling team did observe particulate staining/dust on at least one home structure during the sampling event that could possibly be attributable to the implosion event. Refer to Table 1, Soil Sample Descriptions for sample information including sample locations, location descriptions, sample IDs, CLP sample numbers, sample depths, and general descriptions of the soil.

The sampling team completed sampling activities on February 19, 2020 and all personnel demobilized from the Site. TechLaw returned to their Wheeling, WV office and updated the SCRIBE™ database. Samples were labeled, tagged, packaged and shipped under chain-of-custody to the respective laboratories specified in Section 4.2. The samples were packaged and shipped on ice with the exception of the samples scheduled for asbestos analysis. All samples were shipped on February 20, 2020 to the laboratories via FedEx priority overnight. One cooler containing the samples for metals and mercury analyses was delayed by the courier and arrived at the laboratory on February 24, 2020. TechLaw did not receive notification from the courier that the shipment would be delayed. Regional copies of the chain of custody/traffic reports (COC/TR) for all samples shipped are presented in Attachment 1. Refer to Table 1, Sample Log (attached) which tabulates sample location and description information.

5.0 ANALYTICAL RESULTS

Analytical services for TAL total metals by analytical method ISM02.4 ICP-AES and for mercury by method ISM02.4 were provided by Bonner Analytical Testing Company under EPA

CLP RAS Case number 48747. Analytical services for hexavalent chromium by solid waste analytical method SW3060A/7199A were provided by OASQA under EPA DAS Case number R35756. Analytical services for polarized light microscopy asbestos analysis by analytical method EPA/600/R-93/116were provided by EMSL Analytical, Inc. under Tier IV DAS Case number R35754.

5.1 Data Validation

Independent third party data validation of the analytical data provided through the CLP and the Tier IV laboratories was completed by the EPA Environmental Services Assistance Team (ESAT) contractor. Inorganic data were validated according to the EPA CLP National Functional Guidelines for Inorganic Superfund Methods Data Review (January 2017) and applicable EPA Region III modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The inorganics validation report has been assigned the Superfund Data Validation Level Stage 3 Validation Electronic Manual (S3VEM). Analytical data for samples analyzed by the EPA OASQA were reviewed and validated in accordance with internal QA/QC requirements.

The Final Report containing validated hexavalent chromium results was received from OASQA on April 15, 2020. The data validation report for metals and mercury was received from ESAT on May 5, 2020. The data validation report for asbestos was received on June 2, 2020. Refer to Attachments 2, 3 and 4 – Data Validation Reports for findings documented during the data validation process.

The data validators sometimes assign qualifiers to data based on a review of the data and quality control parameters. Lists of potential data qualifiers typically used and definitions are provided below.

Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for but was not detected above the level of the reported sample quantitation limit.
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

5.2 TAL Metals, Mercury and Hexavalent Chromium Results

5.2.1 Comparison To EPA's Removal Management Levels

The inorganic analytical results for surface soil samples were compared to EPA Regional Removal Management Levels (RMLs) for Industrial and Residential soil (Target Hazard Quotient [THQ]=3.0) (EPA, 2019b) and EPA RMLs for Industrial and Residential soil (THQ=1.0) (EPA, 2019b). The RMLs discussed in this report and provided in the attached tables are generic in that they are calculated without using site-specific information. The RMLs assist with identifying areas, contaminants and conditions where a removal action under CERCLA may be appropriate. Other factors such as background concentrations, site-specific exposure scenarios, or other program considerations are also considered when evaluating the appropriateness for conducting removal actions. RMLs are not meant to define protective levels and are not de facto cleanup levels. The generic RMLs correspond to risk levels of approximately 10-4 and/or a Hazard Quotient of up to 3 for long-term exposure to individual chemicals at a site. The generic RML tables provide risk-based values corresponding to an HQ of 1 and 3 for those chemicals with potential non-carcinogenic toxicity as there may be site-specific and/or chemical specific circumstances where an HQ less than 3 may be more appropriate for calculating RMLs. For example, RMLs corresponding to an HQ of 1 may be more appropriate for those sites where multiple chemicals are present that have reference doses (RfDs) or reference concentrations (RfCs) based on the same toxic endpoint or where the toxicity of a chemical is such that exceeding the RfD/RfC, even slightly, warrants particular concern (EPA, 2019b).

Analytical results that exceeded the screening benchmarks are presented in the subsections below. Refer to Table 1, Sample Log and the attached Photo Log for sample locations and descriptions.

5.2.1.1 RML THQ=3 Exceedances

There were two samples that exceeded the RML THQ=3 screening levels for metals in residential soil. Sample SS-05 exceeded the benchmark for lead and sample SS-18 exceeded the benchmark for manganese as further described below.

Lead was detected at a concentration of 485 mg/kg in sample SS-05. The concentration exceeded the residential soil RML benchmark of 400 mg/kg. There were no other samples that exceeded screening level benchmarks for lead.

Manganese was detected at a concentration of 5,510 mg/kg in sample SS-18. The concentration slightly exceeded the residential soil RML THQ=3.0 benchmark concentration of 5,500 mg/kg. Sample SS-18 was a background sample collected from a location approximately 0.75 miles south of the former BOP.

There were no other sample results for metals that exceeded RML THQ=3 benchmarks. Refer to Table 2 for a comparison of the metals data to the RML THQ=3 screening level benchmarks. In the tables, benchmark exceedances are identified by color shading. The color key located in the upper left corner on each table describes the type of benchmark exceedance.

5.2.1.2 RML THQ=1.0 Exceedances

There were eight samples that exceeded the RML THQ=1.0 screening level benchmarks for metals in residential soil. The samples included SS-03, SS-04, SS-05, SS-09, SS-11, SS-17, SS-18 and SS-19 which contained elevated concentrations of arsenic, iron and/or manganese. These samples and the exceedances are further described below.

Only one sample, SS-19, exceeded the RML for arsenic. Arsenic was detected in SS-19 at a concentration of 43.9 mg/kg which exceeded the RML of 35 mg/kg for arsenic in residential soil. SS-19 was collected from a background location approximately 1,800 feet southwest of the former BOP.

Iron was detected in four samples at concentrations that exceeded the residential soil RML benchmark (THQ=1.0) of 55,000 mg/kg. The samples that exceeded the RML included duplicate samples SS-03 (62,700 mg/kg)/SS-04 (64,700 mg/kg) and background samples SS-17 (63,500 mg/kg), and SS-19 (58,500 mg/kg).

Lead was detected at a concentration of 485 mg/kg in sample SS-05 which exceeded the RML of 400 mg/kg.

Manganese was detected at concentrations exceeding the residential soil RML benchmark (THQ=1.0) of 1,800 mg/kg in seven samples. These included duplicate samples SS-03 (4,670 mg/kg)/SS-04 (4,000 mg/kg), SS-09 (2,120 mg/kg), SS-11 (2,340 mg/kg) and background samples SS-17 (1,990 mg/kg), SS-18 (5,510 mg/kg) and SS-19 (1,870 mg/kg).

There were no other metals results that exceeded RML THQ=1.0 benchmarks for residential soil or industrial soil scenarios. Refer to Table 3 for a comparison of the metals results to the RML THQ=1.0 screening level benchmarks.

5.2.2 Comparison to Background Levels

Factors such as background levels, may also be considered in evaluating sample data and the need for further action. Background concentrations can be evaluated as natural background levels or as anthropogenic background levels. Natural background levels refer to elements and compounds that occur naturally in the earth without any human interference. Anthropogenic background levels refer to concentrations of elements and compounds that occur over an area as a result of human activities. The most common example of a naturally occurring background condition is metals in soils. Nearly all soils contain a variety of metal constituents, such as iron, aluminum and lead. These constituents are present in the rocks from which the soils are ultimately derived, and the concentrations can be quite variable and dependent on the specific geologic environment.

In order to compare the analytical data collected as part of this assessment to natural background levels, EPA will use natural background levels that are consistent with Section 3.8.2 of West Virginia's Voluntary Remediation Program Guidance Manual and presented in Table 4. The analytical data from the area in the vicinity of Weir Avenue will also be compared to the three background samples to assess if there are any anthropogenic background levels.

5.2.2.1 Natural Background Levels

All of the soil samples were analyzed for TAL metals which consisted of 23 metals. The laboratory analysis reported no detectable levels of antimony, selenium, silver, sodium, thallium and hexavalent chromium in all sample locations except for SS-01.

A simple comparison of the published natural background levels for West Virginia to the data collected as part of this assessment showed that samples collected did not exceed the natural background levels for aluminum, barium, beryllium, cobalt and potassium.

Thirteen metals including arsenic, cadmium, calcium, copper, iron, lead, magnesium, manganese, mercury, nickel, vanadium and zinc exceeded the published natural background levels. A number of these metals can be associated with the historical industrial operations for the area which may be detected in anthropogenic background levels.

Of the thirteen metals exceeding natural background levels, arsenic, iron, lead and manganese exceeded the RML screening benchmarks.

5.2.2.2 Anthropogenic Background Levels

Three soil samples were selected outside of the implosion plume and collected as site-specific background samples. The locations of the site-specific background samples were non-industrial areas. An average value of the three samples was used in the comparison of Site samples compared to the site-specific background samples.

There were no detectable levels of antimony, selenium, silver, sodium, thallium and hexavalent chromium in the three background locations.

For eleven of the metals, results of the samples collected in the Weir Avenue location were similar to the site-specific background locations including aluminum, cadmium, chromium, cobalt, copper, lead, manganese, mercury, nickel, potassium and vanadium.

Arsenic, barium, beryllium, calcium, iron and magnesium were lower in the Weir Avenue samples compared to the average value for the site-specific background locations

Zinc was higher in the Weir Avenue samples as compared to the site-specific background locations.

5.3 Asbestos Results

The EPA and OSHA consider a material to be asbestos-containing if at least one sample from the homogenous area shows asbestos in an amount greater than 1%. The asbestos results were compared to the 1% concentration standard.

There were no soil samples that contained asbestos fibers at concentrations greater than 1%. Asbestos results for all samples except one were non-detect. In the one sample where asbestos was identified, chrysotile asbestos was observed in sample SS-12 at a trace concentration of <0.25%. Refer to Table 5 for a summary of asbestos results.

5.4 Quality Control Sample Results

As described in Section 4.3, TechLaw collected one rinsate blank (RB-01) from stainless steel

trowels that were decontaminated prior to mobilization and used to collect soil samples during the sampling event. The sample was analyzed for total metals, mercury and hexavalent chromium. All parameters were non-detect and no data were qualified based on the laboratory results. RB-01 laboratory results may be found in the data validation report in Attachment 2.

6.0 SUMMARY

A total of 19 soil samples including two duplicate samples were collected from 17 locations at the Site. The sampling locations included 14 parcels located in the residential and commercial properties near the March 9, 2019 BOP implosion site, plus three additional background locations that were located north, south and southwest of the implosion area. The soil samples were analyzed for TAL Metals, mercury, hexavalent chromium and asbestos content.

Analytical results for the TAL metals, mercury, and hexavalent chromium indicated that lead and manganese exceeded the residential soil RML THQ=3 benchmark. This occurred in samples SS-05 where the lead concentration was 485 mg/kg, and in SS-18 where the manganese concentration was 5,510 mg/kg. Sample SS-05 was collected from a vacant residential lot without structures where residential construction/demolition debris was observed in the surface soil cover. Sample SS-18 was collected from a background location near the perimeter fence line of a community events center.

Arsenic, iron and manganese concentrations in surface soil samples exceeded the RML THQ=1 benchmark for residential soil in eight samples. The RML for arsenic (35 mg/kg) was exceeded in one sample, SS-19, that had a concentration of 43.9 mg/kg. SS-19 was collected from a background location approximately 1,800 feet southwest of the former BOP. Iron was detected in four samples at concentrations exceeding the residential soil RML (THQ=1.0). The samples included SS-03 (62,700 mg/kg)/SS-04 (64,700 mg/kg), SS-17 (63,500 mg/kg), and SS-19 (58,500 mg/kg). Manganese was detected at concentrations exceeding the residential soil RML (THQ=1.0) in seven samples. These included duplicate sample set SS-03 (4,670 mg/kg)/SS-04 (4,000 mg/kg), SS-09 (2,120 mg/kg), SS-11 (2,340 mg/kg), SS-17 (1,990 mg/kg), SS-18 (5,510 mg/kg) and SS-19 (1,870 mg/kg).

Asbestos results were non-detect in all samples except SS-12 which contained a trace level of chrysotile (<0.25%) which is less than the 1% EPA standard for identifying ACM.

A review of the site data compared to background levels was to provide a cursory review to see if levels at the Site could be attributable to naturally occurring metals or anthropogenic conditions. The cursory review showed that concentrations within the Site along Weir Avenue exceed published West Virginia background levels for a number of the metals that are consistent with industrial operations that have been conducted in the area. Comparison of the site data to the site-specific background locations support that the area has metal concentrations which appear to be associated with widespread anthropogenic conditions. A complete background study would need to be conducted to support further conclusions regarding unknown or unconfirmed sources.

7.0 CONCLUSION

EPA was asked by the WVDEP to perform a removal site evaluation on a residential neighborhood adjacent to the Weirton BOP facility to determine if contaminants are present as a

result of the implosion of the BOP structure which took place in March of 2019. EPA's review of the analytical data collected in February 2020 showed concentrations of metals in all of the samples. A small number of samples had levels that exceeded EPA's removal screening benchmarks for soils. Three sample locations exceeded EPA's removal screening levels for iron and manganese, one sample location exceeded for lead and one sample location contained a trace level of asbestos. The background samples outside of the implosion plume contained levels of iron, manganese and arsenic that exceeded removal screening benchmarks. EPA's review of the data showed levels consistent with backgrounds level, both natural occurring and historical, and that a removal action is not warranted.

EPA has coordinated a review of the data with the WVDEP. WVDEP responded that EPA's removal evaluation was satisfactory in the number of samples collected, sample locations provided a broad area to assess potential impact and addressed their request for a more thorough assessment. WVDEP's review of the data did not identify significant exceedances as it related to the WVDEP's RCRA program and would not be pursuing any cleanup of the soils.

EPA has also requested that the Agency for Toxic Substances and Disease Registry (ATSDR) review the data and provide a Public Health Evaluation for the Site. EPA will review any recommendations made by the ATSDR and evaluate if any additional actions can be conducted.

8.0 REFERENCES

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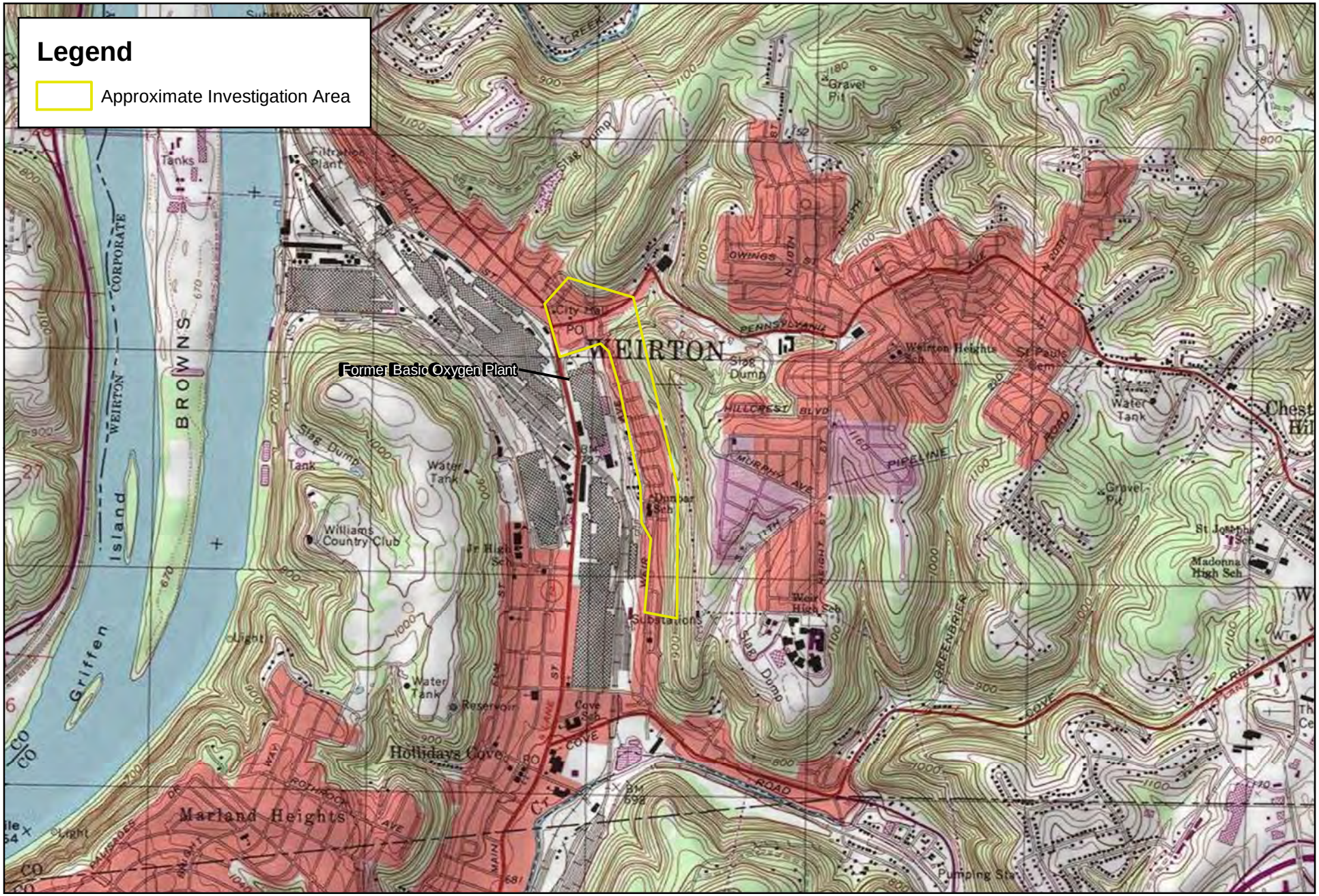
FIGURES



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Contract No. EP-S3-15-03
TDD: T501-19-11-001

Figure 1: Site Location Map
Weirton BOP Implosion Site
Weirton, West Virginia

0 700 1,400 2,800 Feet
NAD 1983 - State Plane West Virginia North (ft)

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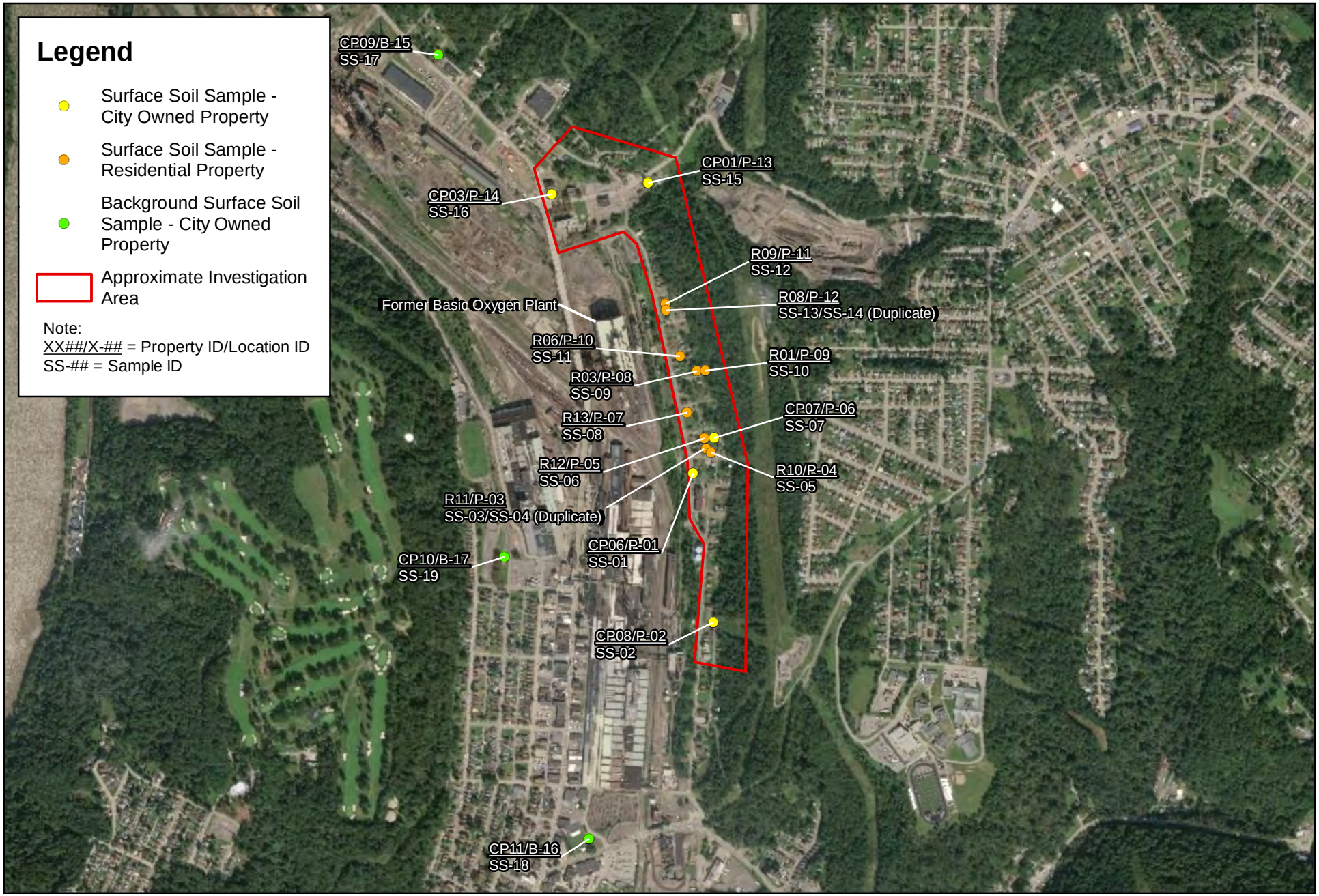
Contract No. EP-S3-15-03
TDD: T501-19-11-001

Figure 2: Site Aerial Map
Weirton BOP Implosion Site
Weirton, West Virginia

0 305 610 1,220 Feet
NAD 1983 - State Plane West Virginia North (ft)



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Contract No. EP-S3-15-03
TDD: T501-19-11-001

Figure 3: Sample Location Map
Weirton BOP Implosion Site
Weirton, West Virginia

0 450 900 1,800 Feet
NAD 1983 - State Plane West Virginia North (ft)

TABLES

Table 1 - Surface Soil Sample Log
Weirton BOP Implosion Site
February 19, 2020

Sample ID	CLP/DAS Sample IDs	Sample Loc ID	Property ID	Location Description	Sub-Location Description	Sample Depth (in)	Comments
SS-01	MC0AB2 R35754-01 R35756-01	P-01	CP06	Playground with small pavilion tucked into the northwest corner, grass cover	South side of pavillion in roof drip line	0-3	Soils: light to medium brown, low plasticity, loamy-silty, moist
SS-02	MC0AB3 R35754-02 R35756-02	P-02	CP08	Fenced in pump house situated on a west sloping hill, sparse grass cover	Along fence line, west and downgradient of gutter spout	0-3	Soils: medium to dark brown, silt loam, some moisture, low plasticity, sun angular gravels and pebbles, poorly sorted present.
SS-03	MC0AB4 R35754-03 R35756-03	P-03	R11	Vacant residential lot, no structures, grass cover	13 feet east of May St. in line with N. wall of brown house other side of May St. 70 feet north of Kessel St	0-3	Soils: black silt, gravels, clay tile fragments,
SS-04 (Duplicate of SS-03)	MC0AB5 R35754-04 R35756-04						
SS-05	MC0AB6 R35754-05 R35756-05	P-04	R10	Vacant residential lot, no structures, grass cover	50 feet east of May St. edge, 50' north of Kessel St, 5-7 feet higher elevation than SS-03	0-3	Soils: Dark gravelly silt loam, loose, moist; construction/demolition debris, tile frag
SS-06	MC0AB7 R35754-06 R35756-06	P-05	R12	Vacant residential lot, no structures, grass cover	Est. 10 feet east of May St, below basketball court in line with N porch line of beige house above BB court	0-3	Soils: Dark gravelly silt loam, loose, moist
SS-07	MC0AB8 R35754-07 R35756-07	P-06	CP07	Fenced in community basketball court, thick grass cover	8 inches east of east-side fence line of basketball court, 3.5 fence poles N of NE corner of court along fence line	0-3	Soils: medium brown loam, moist
SS-08	MC0AB9 R35754-08 R35756-08	P-07	R13	Vacant residential lot, no structures, grass cover	45' south of Mendel St. sidewalk edge, 6 feet west of east edge of exposed foundation	0-3	Soils: medium brown, silt loam, low plasticity
SS-09	MC0AC0 R35754-09 R35756-09	P-08	R03	Vacant residential lot, no structures, vegetation and undergrowth present	Deer trail, 73' from eastern edge of May St, 30' from edge of Loeb St	0-3	Soils: organic, black loam
SS-10	MC0AC1 R35754-10 R35756-10	P-09	R01	Vacant residential lot, no structures, vegetation and undergrowth present	171 feet east of May St; est 20 feet north of Loeb St.	0-3	Soils: dark gray to black, moist, silt loam, plant matter and gravels present
SS-11	MC0AC2 R35754-11 R35756-11	P-10	R06	Vacant residential lot, former house foundation present, grass cover	Centrally located in upgradient quarter of lot.	0-3	Soils: Med brown, mosit, silty loam, root material present
SS-12	MC0AC3 R35754-12 R35756-12	P-11	R09	Vacant residential lot, no structures, grass cover.	58 feet east from edge of sidewalk on Weir Ave. 80 feet from south edge of Ohio St.	0-3	Soils: organic silty loam, roots present

Table 1 - Surface Soil Sample Log
Weirton BOP Implosion Site
February 19, 2020

Sample ID	CLP/DAS Sample IDs	Sample Loc ID	Property ID	Location Description	Sub-Location Description	Sample Depth (in)	Comments
SS-13	MC0AC4 R35754-13 R35756-13	P-12	R08	Vacant residential lot, clear, no structures, grass cover.	57 feet east of sidewalk on Weir Ave at base of upper terrace. 141 feet south of Ohio St.	0-3	Soils: medium brown, moist, non plastic, silty loam, some root material present
SS-14 (Duplicate of SS-13)	MC0AC5 R35754-14 R35756-14						
SS-15	MC0AC6 R35754-15 R35756-15	P-13	CP01	Vacant lot, medium sized trees and overhead power lines present, thin grass cover	Est. 45 feet SE of Pennsylvania Ave and approx 60 feet NE of Auto Repair parking lot edge.	0-3	Soils: brown, silt loam with root material prsent
SS-16	MC0AC7 R35754-16 R35756-16	P-14	CP03	Public park, memorial location, grass cover	4 feet west of 4-in diameter tree in center circle of park walkway	0-3	Soils: medium to dark brown, fine silty loam, low moisture content, loose non-plastic
SS-17	MC0AC8 R35754-17 R35756-17	B-15	CP09	Training facility and fire station for the city of Weirton, sparse weed cover	NW Corner of Lot outside of fenceline in shrub-brush. East of back lot gate. Low area collects runoff from upgradient.	0-3	Soils: dark brown, silt loam, moist
SS-18	MC0AC9 R35754-18 R35756-18	B-16	CP11	Community events center for the city of Weirton, grass cover	Est. 125' SE from easternmost corner of parking lot. 1 foot east of fence line.	0-3	Soils: black organic loam, loose, small gravels, slightly moist,
SS-19	MC0AD0 R35754-19 R35756-19	B-17	CP10	Playground and basketball court, grass cover	Est. 10 feet north of north side of basketball court. Outside of fence. 15' west of NE fence corner.	0-3	Soils: brown, silty loam, some root material

Key
CP = City Property (Property ID)
R = Residential Property (Property ID)
P = Property (Sample Location)
B = Background (Sample Location)

Table 2
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=3.0 Comparisons

Result > Benchmarks A, B
Result > Benchmark A Only
Result > Benchmark B Only

			CLP Sample Number:	MC0AB2		MC0AB3		MC0AB4		MC0AB5		MC0AB6		MC0AB7		MC0AB8		MC0AB9	
			Sample #:	SS-01		SS-02		SS-03		SS-04		SS-05		SS-06		SS-07		SS-08	
			Sampling Location:	P-01		P-02		P-03		P-03		P-04		P-05		P-06		P-07	
			Sub-Location	CP06		CP08		R11		R11		R10		R12		CP07		R13	
			Sample Type	Field Sample		Field Sample		Field Sample		Dupe of SS-03		Field Sample		Field Sample		Field Sample		Field Sample	
			Matrix:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
			Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Date Sampled:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
			Date Analyzed:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
Parameter	CAS No.	A RML THQ=3.0 ResSoil mg/kg	B RML THQ=3.0 IndSoil mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000	15000		16400		12900		12400		14300		13200		16100		17600	
Antimony	7440-36-0	94	1400	1.3	J	7.3	U	7.2	U	6.9	U	8.4	U	8.6	U	9.6	U	8.2	U
Arsenic	7440-38-2	68	300	11.4		18.1		20.1		20.3		17.1		11.6		10		8.8	
Barium	7440-39-3	46000	650000	81.1		192		285		249		236		113		107		142	
Beryllium	7440-41-7	470	6900	0.65	J	1		0.8		0.83		1.2		0.85		1.3		1	
Cadmium	7440-43-9	210	2900	0.15	J	0.93		2.4		2.1		1.4		0.71	U	0.8	U	0.68	U
Calcium	7440-70-2			4520		8040		19400		13900		11500		7160		9090		4740	
Chromium	7440-47-3			59.8		41.9		218		186		54.7		43.1		44.8		42.7	
Cobalt	7440-48-4	70	1000	10.9		12.8		11.2		10.6		11.4		8.3		12.4		12.3	
Copper	7440-50-8	9400	140000	22		31.7		204		210		45.2		33.4		28.3		17.2	
Iron	7439-89-6	160000	2500000	32400		34100		62700		64700		35900		30200		33300		26900	
Lead	7439-92-1	400	800	28		246		382		361		485		114		43.9		41.1	
Magnesium	7439-95-4			3310		4410		5060		4570		3720		2800		4960		3070	
Manganese	7439-96-5	5500	77000	1200		1110		4670		4000		1460		826		991		1530	
Nickel	7440-02-0	4600	67000	22.3		28.8		32.2		26.7		22.6		19.9		33.5		23.3	
Potassium	7440-09-7			1700		2150		1920		1820		2330		1790		2500		2530	
Selenium	7782-49-2	1200	18000	4.9	U	4.3	U	4.2	U	4	U	4.9	U	5	U	5.6	U	4.8	U
Silver	7440-22-4	1200	18000	0.23	J	1.2	U	1.2	U	1.1	U	1.4	U	1.4	U	1.6	U	1.4	U
Sodium	7440-23-5			47.4	J	608	U	597	U	573	U	704	U	715	U	800	U	679	U
Thallium	7440-28-0	2.3	35	3.5	U	3	UJ	3	UJ	2.9	UJ	3.5	UJ	3.6	UJ	4	UJ	3.4	UJ
Vanadium	7440-62-2	1200	17000	40.4		36.5		96.4		87.7		38.8		32.5		33		36.7	
Zinc	7440-66-6	70000	1100000	194		3010		1000		927		682		353		1110		197	
Mercury	7439-97-6	33	140	0.031	J	0.12	UJ	0.32		0.25		0.31		0.14	UJ	0.16	UJ	0.14	UJ
Hexavalent Chromium	18540-29-9	30	630	0.61	U	0.51	U	0.5	U	0.53	U	0.58	U	0.58	U	0.65	U	0.59	U
SOLIDS, PERCENT				65.2		78.3		80.3		75.4		68.5		68.7		61.2		68	

Table 2
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=3.0 Comparisons

Result > Benchmarks A, B
Result > Benchmark A Only
Result > Benchmark B Only

			CLP Sample Number:	MC0AC0		MC0AC1		MC0AC2		MC0AC3		MC0AC4		MC0AC5		MC0AC6		MC0AC7	
			Sample #:	SS-09		SS-10		SS-11		SS-12		SS-13		SS-14		SS-15		SS-16	
			Sampling Location:	P-08		P-09		P-10		P-11		P-12		P-12		P-13		P-14	
			Sub-Location	R03		R01		R06		R09		R08		R08		CP01		CP03	
			Sample Type	Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Dupe of SS-13		Field Sample		Field Sample	
			Matrix:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
			Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Date Sampled:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
			Date Analyzed:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
Parameter	CAS No.	A RML THQ=3.0 ResSoil mg/kg	B RML THQ=3.0 IndSoil mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000	16200		14800		16800		13600		12600		11900		10700		12000	
Antimony	7440-36-0	94	1400	11.2	U	7.6	U	8.3	U	7.7	U	8.5	U	8.4	U	7.4	U	7.5	U
Arsenic	7440-38-2	68	300	15.7		17.3		17.3		18.4		11.5		10.5		12.8		14.1	
Barium	7440-39-3	46000	650000	121		138		188		138		63.6		60.1		57		154	
Beryllium	7440-41-7	470	6900	0.93	U	0.88		0.95		0.81		0.71	U	0.7	U	0.61	U	0.95	
Cadmium	7440-43-9	210	2900	2.5		0.98		1.6		1.1		0.71	U	0.7	U	0.61	U	0.63	U
Calcium	7440-70-2			14200		5820		5830		4840		3300		3420		2900		8170	
Chromium	7440-47-3			66.3		57.7		94.3		63.1		30.9		29.8		37.4		37.5	
Cobalt	7440-48-4	70	1000	13		12.1		13		10.8		8.6		7.9		7.5		13.3	
Copper	7440-50-8	9400	140000	54.1		36.3		38.2		38.7		21.1		20.6		21.3		45.3	
Iron	7439-89-6	160000	2500000	45100		44400		44300		38500		25400		24000		24600		34700	
Lead	7439-92-1	400	800	189		144		221		145		39.5		41.2		41.4		30.9	
Magnesium	7439-95-4			4450		3460		3710		2990		2370		2300		2220		3470	
Manganese	7439-96-5	5500	77000	2120		1370		2340		1420		619		580		953		1160	
Nickel	7440-02-0	4600	67000	30		24.1		26		22.3		17.4		16.2		15.5		28.7	
Potassium	7440-09-7			3190		2000		2590		1610		1530		1460		1200		2030	
Selenium	7782-49-2	1200	18000	6.5	U	4.5	U	4.8	U	4.5	U	5	U	4.9	U	4.3	U	4.4	U
Silver	7440-22-4	1200	18000	1.9	U	1.3	U	1.4	U	1.3	U	1.4	U	1.4	U	1.2	U	3	
Sodium	7440-23-5			930	U	636	U	689	U	638	U	711	U	698	U	614	U	627	U
Thallium	7440-28-0	2.3	35	4.7	UJ	3.2	UJ	3.4	UJ	3.2	UJ	3.6	UJ	3.5	UJ	3.1	UJ	3.1	UJ
Vanadium	7440-62-2	1200	17000	43.8		38.9		54.4		41.5		31.2		29.6		30		28.7	
Zinc	7440-66-6	70000	1100000	962		463		691		469		136		152		180		150	
Mercury	7439-97-6	33	140	0.3		0.25		0.14		0.14		0.13	UJ	0.14	UJ	0.12	UJ	0.14	
Hexavalent Chromium	18540-29-9	30	630	0.82	U	0.55	U	0.57	U	0.53	U	0.57	U	0.57	U	0.52	U	0.53	U
SOLIDS, PERCENT				48.4		73.2		69.6		75.1		70.5		70.1		76.9		75.4	

Table 2
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=3.0 Comparisons

Result > Benchmarks A, B Result > Benchmark A Only Result > Benchmark B Only											
				CLP Sample Number:	MC0AC8		MC0AC9		MC0AD0	
				Sample #:	SS-17		SS-18		SS-19	
				Sampling Location:	B-15		B-16		B-17	
				Sub-Location	CP09		CP11		CP10	
				Sample Type	Field Sample		Field Sample		Field Sample	
				Matrix:	Soil		Soil		Soil	
				Units:	mg/kg		mg/kg		mg/kg	
				Date Sampled:	2/19/2020		2/19/2020		2/19/2020	
				Date Analyzed:	3/10/2020		3/10/2020		3/10/2020	
		A	B							
Parameter	CAS No.	RML THQ=3.0 ResSoil mg/kg	RML THQ=3.0 IndSoil mg/kg		Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	230000	3400000		15600		17000		15900	
Antimony	7440-36-0	94	1400		8.8	U	7.7	U	9.5	U
Arsenic	7440-38-2	68	300		18.2		21.3		43.9	
Barium	7440-39-3	46000	650000		168		269		142	
Beryllium	7440-41-7	470	6900		3		2.5		1.9	
Cadmium	7440-43-9	210	2900		1.8		0.64	U	0.92	
Calcium	7440-70-2				44500		36200		13600	
Chromium	7440-47-3				71.3		43.9		76.3	
Cobalt	7440-48-4	70	1000		7.4	U	6.8		9	
Copper	7440-50-8	9400	140000		38.6		25.1		64.1	
Iron	7439-89-6	160000	2500000		63500		44700		58500	
Lead	7439-92-1	400	800		136		129		151	
Magnesium	7439-95-4				16000		10700		4420	
Manganese	7439-96-5	5500	77000		1990		5510		1870	
Nickel	7440-02-0	4600	67000		19.4		21.4		21.4	
Potassium	7440-09-7				1960		1550		1470	
Selenium	7782-49-2	1200	18000		5.2	U	4.5	U	5.5	U
Silver	7440-22-4	1200	18000		1.5	U	1.3	U	1.6	U
Sodium	7440-23-5				737	U	639	U	789	U
Thallium	7440-28-0	2.3	35		3.7	UJ	3.2	UJ	3.9	UJ
Vanadium	7440-62-2	1200	17000		42.9		47.5		58.9	
Zinc	7440-66-6	70000	1100000		635		575		447	
Mercury	7439-97-6	33	140		0.15	UJ	0.16		0.16	UJ
Hexavalent Chromium	18540-29-9	30	630		0.6	U	0.5	U	0.67	U
SOLIDS, PERCENT					66.2		79.4		59.9	

Table 3
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=1.0 Comparisons

Result > Benchmarks A, B
Result > Benchmark A Only
Result > Benchmark B Only

			CLP Sample Number:	MC0AB2		MC0AB3		MC0AB4		MC0AB5		MC0AB6		MC0AB7		MC0AB8		MC0AB9	
			Sample #:	SS-01		SS-02		SS-03		SS-04		SS-05		SS-06		SS-07		SS-08	
			Sampling Location:	P-01		P-02		P-03		P-03		P-04		P-05		P-06		P-07	
			Sub-Location	CP06		CP08		R11		R11		R10		R12		CP07		R13	
			Sample Type	Field Sample		Field Sample		Field Sample		Dupe of SS-03		Field Sample		Field Sample		Field Sample		Field Sample	
			Matrix:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
			Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Date Sampled:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
			Date Analyzed:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
Parameter	CAS No.	A RML THQ=1.0 ResSoil mg/kg	B RML THQ=1.0 IndSoil mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	77000	1100000	15000		16400		12900		12400		14300		13200		16100		17600	
Antimony	7440-36-0	31	470	1.3	J	7.3	U	7.2	U	6.9	U	8.4	U	8.6	U	9.6	U	8.2	U
Arsenic	7440-38-2	35	300	11.4		18.1		20.1		20.3		17.1		11.6		10		8.8	
Barium	7440-39-3	15000	220000	81.1		192		285		249		236		113		107		142	
Beryllium	7440-41-7	160	2300	0.65	J	1		0.8		0.83		1.2		0.85		1.3		1	
Cadmium	7440-43-9	71	980	0.15	J	0.93		2.4		2.1		1.4		0.71	U	0.8	U	0.68	U
Calcium	7440-70-2			4520		8040		19400		13900		11500		7160		9090		4740	
Chromium	7440-47-3			59.8		41.9		218		186		54.7		43.1		44.8		42.7	
Cobalt	7440-48-4	23	350	10.9		12.8		11.2		10.6		11.4		8.3		12.4		12.3	
Copper	7440-50-8	3100	47000	22		31.7		204		210		45.2		33.4		28.3		17.2	
Iron	7439-89-6	55000	820000	32400		34100		62700		64700		35900		30200		33300		26900	
Lead	7439-92-1	400	800	28		246		382		361		485		114		43.9		41.1	
Magnesium	7439-95-4			3310		4410		5060		4570		3720		2800		4960		3070	
Manganese	7439-96-5	1800	26000	1200		1110		4670		4000		1460		826		991		1530	
Nickel	7440-02-0	1500	22000	22.3		28.8		32.2		26.7		22.6		19.9		33.5		23.3	
Potassium	7440-09-7			1700		2150		1920		1820		2330		1790		2500		2530	
Selenium	7782-49-2	390	5800	4.9	U	4.3	U	4.2	U	4	U	4.9	U	5	U	5.6	U	4.8	U
Silver	7440-22-4	390	5800	0.23	J	1.2	U	1.2	U	1.1	U	1.4	U	1.4	U	1.6	U	1.4	U
Sodium	7440-23-5			47.4	J	608	U	597	U	573	U	704	U	715	U	800	U	679	U
Thallium	7440-28-0	0.78	12	3.5	U	3	UJ	3	UJ	2.9	UJ	3.5	UJ	3.6	UJ	4	UJ	3.4	UJ
Vanadium	7440-62-2	390	5800	40.4		36.5		96.4		87.7		38.8		32.5		33		36.7	
Zinc	7440-66-6	23000	350000	194		3010		1000		927		682		353		1110		197	
Mercury	7439-97-6	11	46	0.031	J	0.12	UJ	0.32		0.25		0.31		0.14	UJ	0.16	UJ	0.14	UJ
Hexavalent Chromium	18540-29-9	30	630	0.61	U	0.51	U	0.5	U	0.53	U	0.58	U	0.58	U	0.65	U	0.59	U
SOLIDS, PERCENT				65.2		78.3		80.3		75.4		68.5		68.7		61.2		68	

Table 3
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=1.0 Comparisons

Result > Benchmarks A, B
Result > Benchmark A Only
Result > Benchmark B Only

			CLP Sample Number:	MC0AC0		MC0AC1		MC0AC2		MC0AC3		MC0AC4		MC0AC5		MC0AC6		MC0AC7	
			Sample #:	SS-09		SS-10		SS-11		SS-12		SS-13		SS-14		SS-15		SS-16	
			Sampling Location:	P-08		P-09		P-10		P-11		P-12		P-12		P-13		P-14	
			Sub-Location	R03		R01		R06		R09		R08		R08		CP01		CP03	
			Sample Type	Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Dupe of SS-13		Field Sample		Field Sample	
			Matrix:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
			Units:	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
			Date Sampled:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
			Date Analyzed:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
Parameter	CAS No.	A RML THQ=1.0 ResSoil mg/kg	B RML THQ=1.0 IndSoil mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	77000	1100000	16200		14800		16800		13600		12600		11900		10700		12000	
Antimony	7440-36-0	31	470	11.2	U	7.6	U	8.3	U	7.7	U	8.5	U	8.4	U	7.4	U	7.5	U
Arsenic	7440-38-2	35	300	15.7		17.3		17.3		18.4		11.5		10.5		12.8		14.1	
Barium	7440-39-3	15000	220000	121		138		188		138		63.6		60.1		57		154	
Beryllium	7440-41-7	160	2300	0.93	U	0.88		0.95		0.81		0.71	U	0.7	U	0.61	U	0.95	
Cadmium	7440-43-9	71	980	2.5		0.98		1.6		1.1		0.71	U	0.7	U	0.61	U	0.63	U
Calcium	7440-70-2			14200		5820		5830		4840		3300		3420		2900		8170	
Chromium	7440-47-3			66.3		57.7		94.3		63.1		30.9		29.8		37.4		37.5	
Cobalt	7440-48-4	23	350	13		12.1		13		10.8		8.6		7.9		7.5		13.3	
Copper	7440-50-8	3100	47000	54.1		36.3		38.2		38.7		21.1		20.6		21.3		45.3	
Iron	7439-89-6	55000	820000	45100		44400		44300		38500		25400		24000		24600		34700	
Lead	7439-92-1	400	800	189		144		221		145		39.5		41.2		41.4		30.9	
Magnesium	7439-95-4			4450		3460		3710		2990		2370		2300		2220		3470	
Manganese	7439-96-5	1800	26000	2120		1370		2340		1420		619		580		953		1160	
Nickel	7440-02-0	1500	22000	30		24.1		26		22.3		17.4		16.2		15.5		28.7	
Potassium	7440-09-7			3190		2000		2590		1610		1530		1460		1200		2030	
Selenium	7782-49-2	390	5800	6.5	U	4.5	U	4.8	U	4.5	U	5	U	4.9	U	4.3	U	4.4	U
Silver	7440-22-4	390	5800	1.9	U	1.3	U	1.4	U	1.3	U	1.4	U	1.4	U	1.2	U	3	
Sodium	7440-23-5			930	U	636	U	689	U	638	U	711	U	698	U	614	U	627	U
Thallium	7440-28-0	0.78	12	4.7	UJ	3.2	UJ	3.4	UJ	3.2	UJ	3.6	UJ	3.5	UJ	3.1	UJ	3.1	UJ
Vanadium	7440-62-2	390	5800	43.8		38.9		54.4		41.5		31.2		29.6		30		28.7	
Zinc	7440-66-6	23000	350000	962		463		691		469		136		152		180		150	
Mercury	7439-97-6	11	46	0.3		0.25		0.14		0.14		0.13	UJ	0.14	UJ	0.12	UJ	0.14	
Hexavalent Chromium	18540-29-9	30	630	0.82	U	0.55	U	0.57	U	0.53	U	0.57	U	0.57	U	0.52	U	0.53	U
SOLIDS, PERCENT				48.4		73.2		69.6		75.1		70.5		70.1		76.9		75.4	

Table 3
Analytical Results for TAL Metals, Hg, Cr^{+6}
RML THQ=1.0 Comparisons

Result > Benchmarks A, B Result > Benchmark A Only Result > Benchmark B Only									
				CLP Sample Number:	MC0AC8		MC0AC9		MC0AD0	
				Sample #:	SS-17		SS-18		SS-19	
				Sampling Location:	B-15		B-16		B-17	
				Sub-Location	CP09		CP11		CP10	
				Sample Type	Field Sample		Field Sample		Field Sample	
				Matrix:	Soil		Soil		Soil	
				Units:	mg/kg		mg/kg		mg/kg	
				Date Sampled:	2/19/2020		2/19/2020		2/19/2020	
				Date Analyzed:	3/10/2020		3/10/2020		3/10/2020	
Parameter	CAS No.	A RML THQ=1.0 ResSoil mg/kg	B RML THQ=1.0 IndSoil mg/kg		Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	77000	1100000		15600		17000		15900	
Antimony	7440-36-0	31	470		8.8	U	7.7	U	9.5	U
Arsenic	7440-38-2	35	300		18.2		21.3		43.9	
Barium	7440-39-3	15000	220000		168		269		142	
Beryllium	7440-41-7	160	2300		3		2.5		1.9	
Cadmium	7440-43-9	71	980		1.8		0.64	U	0.92	
Calcium	7440-70-2				44500		36200		13600	
Chromium	7440-47-3				71.3		43.9		76.3	
Cobalt	7440-48-4	23	350		7.4	U	6.8		9	
Copper	7440-50-8	3100	47000		38.6		25.1		64.1	
Iron	7439-89-6	55000	820000		63500		44700		58500	
Lead	7439-92-1	400	800		136		129		151	
Magnesium	7439-95-4				16000		10700		4420	
Manganese	7439-96-5	1800	26000		1990		5510		1870	
Nickel	7440-02-0	1500	22000		19.4		21.4		21.4	
Potassium	7440-09-7				1960		1550		1470	
Selenium	7782-49-2	390	5800		5.2	U	4.5	U	5.5	U
Silver	7440-22-4	390	5800		1.5	U	1.3	U	1.6	U
Sodium	7440-23-5				737	U	639	U	789	U
Thallium	7440-28-0	0.78	12		3.7	UJ	3.2	UJ	3.9	UJ
Vanadium	7440-62-2	390	5800		42.9		47.5		58.9	
Zinc	7440-66-6	23000	350000		635		575		447	
Mercury	7439-97-6	11	46		0.15	UJ	0.16		0.16	UJ
Hexavalent Chromium	18540-29-9	30	630		0.6	U	0.5	U	0.67	U
SOLIDS, PERCENT					66.2		79.4		59.9	

		CLP Sample Number:	MC0AB2 SS-01 P-01		MC0AB3 SS-02 P-02		MC0AB4 SS-03 P-03		MC0AB5 SS-04 P-03		MC0AB6 SS-05 P-04		MC0AB7 SS-06 P-05		MC0AB8 SS-07 P-06		MC0AB9 SS-08 P-07	
		Sample #:	Field Sample		Field Sample		Field Sample		Dupe of SS-03		Field Sample		Field Sample		Field Sample		Field Sample	
		Sampling Location:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		Sample Type	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Matrix: Units:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
		Date Sampled:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
		Date Analyzed:																
		A																
Parameter	CAS No.	WV_Background Soil (Mean) mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	52921	15000		16400		12900		12400		14300		13200		16100		17600	
Antimony	7440-36-0	0.61	1.3	J														
Arsenic	7440-38-2	8.3	11.4		18.1		20.1		20.3		17.1		11.6		10		8.8	
Barium	7440-39-3	380	81.1		192		285		249		236		113		107		142	
Beryllium	7440-41-7	1.9	0.65	J	1		0.8		0.83		1.2		0.85		1.3		1	
Cadmium	7440-43-9	0.3	0.15	J	0.93		2.4		2.1		1.4							
Calcium	7440-70-2	1568	4520		8040		19400		13900		11500		7160		9090		4740	
Chromium	7440-47-3	40.5	59.8		41.9		218		186		54.7		43.1		44.8		42.7	
Cobalt	7440-48-4	14	10.9		12.8		11.2		10.6		11.4		8.3		12.4		12.3	
Copper	7440-50-8	17.5	22		31.7		204		210		45.2		33.4		28.3		17.2	
Iron	7439-89-6	26256	32400		34100		62700		64700		35900		30200		33300		26900	
Lead	7439-92-1	24.8	28		246		382		361		485		114		43.9		41.1	
Magnesium	7439-95-4	3414	3310		4410		5060		4570		3720		2800		4960		3070	
Manganese	7439-96-5	907	1200		1110		4670		4000		1460		826		991		1530	
Nickel	7440-02-0	20.4	22.3		28.8		32.2		26.7		22.6		19.9		33.5		23.3	
Potassium	7440-09-7	13650	1700		2150		1920		1820		2330		1790		2500		2530	
Selenium	7782-49-2	0.5																
Silver	7440-22-4	<1	0.23	J														
Sodium	7440-23-5	1991	47.4	J														
Thallium	7440-28-0	0.5																
Vanadium	7440-62-2	63	40.4		36.5		96.4		87.7		38.8		32.5		33		36.7	
Zinc	7440-66-6	67	194		3010		1000		927		682		353		1110		197	
Mercury	7439-97-6	0.06	0.031	J			0.32		0.25		0.31							
Hexavalent Chromium	18540-29-9																	
SOLIDS, PERCENT			65.2		78.3		80.3		75.4		68.5		68.7		61.2		68	

Table 4
Analytical Results and
WV Natural Background Levels Comparison

		CLP Sample Number:	MC0AC0 SS-09 P-08		MC0AC1 SS-10 P-09		MC0AC2 SS-11 P-10		MC0AC3 SS-12 P-11		MC0AC4 SS-13 P-12		MC0AC5 SS-14 P-12		MC0AC6 SS-15 P-13		MC0AC7 SS-16 P-14	
		Sample #:	Field Sample		Field Sample		Field Sample		Field Sample		Field Sample		Dupe of SS-13		Field Sample		Field Sample	
		Sampling Location:	Soil		Soil		Soil		Soil		Soil		Soil		Soil		Soil	
		Sample Type	mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg		mg/kg	
		Matrix: Units:	2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020		2/19/2020	
		Date Sampled:	3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020		3/10/2020	
		Date Analyzed:																
		A																
Parameter	CAS No.	WV_Background Soil (Mean) mg/kg	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag	Result	Flag
Aluminum	7429-90-5	52921	16200		14800		16800		13600		12600		11900		10700		12000	
Antimony	7440-36-0	0.61																
Arsenic	7440-38-2	8.3	15.7		17.3		17.3		18.4		11.5		10.5		12.8		14.1	
Barium	7440-39-3	380	121		138		188		138		63.6		60.1		57		154	
Beryllium	7440-41-7	1.9			0.88		0.95		0.81								0.95	
Cadmium	7440-43-9	0.3	2.5		0.98		1.6		1.1									
Calcium	7440-70-2	1568	14200		5820		5830		4840		3300		3420		2900		8170	
Chromium	7440-47-3	40.5	66.3		57.7		94.3		63.1		30.9		29.8		37.4		37.5	
Cobalt	7440-48-4	14	13		12.1		13		10.8		8.6		7.9		7.5		13.3	
Copper	7440-50-8	17.5	54.1		36.3		38.2		38.7		21.1		20.6		21.3		45.3	
Iron	7439-89-6	26256	45100		44400		44300		38500		25400		24000		24600		34700	
Lead	7439-92-1	24.8	189		144		221		145		39.5		41.2		41.4		30.9	
Magnesium	7439-95-4	3414	4450		3460		3710		2990		2370		2300		2220		3470	
Manganese	7439-96-5	907	2120		1370		2340		1420		619		580		953		1160	
Nickel	7440-02-0	20.4	30		24.1		26		22.3		17.4		16.2		15.5		28.7	
Potassium	7440-09-7	13650	3190		2000		2590		1610		1530		1460		1200		2030	
Selenium	7782-49-2	0.5																
Silver	7440-22-4	<1															3	
Sodium	7440-23-5	1991																
Thallium	7440-28-0	0.5																
Vanadium	7440-62-2	63	43.8		38.9		54.4		41.5		31.2		29.6		30		28.7	
Zinc	7440-66-6	67	962		463		691		469		136		152		180		150	
Mercury	7439-97-6	0.06	0.3		0.25		0.14		0.14								0.14	
Hexavalent Chromium	18540-29-9																	
SOLIDS, PERCENT			48.4		73.2		69.6		75.1		70.5		70.1		76.9		75.4	

		CLP Sample Number:	MC0AC8 SS-17 B-15		MC0AC9 SS-18 B-16		MC0AD0 SS-19 B-17		
		Sample #:	Field Sample		Field Sample		Field Sample		
		Sampling Location:	Soil		Soil		Soil		
		Sample Type	mg/kg		mg/kg		mg/kg		
		Matrix: Units:	2/19/2020		2/19/2020		2/19/2020		
		Date Sampled:	3/10/2020		3/10/2020		3/10/2020		
		Date Analyzed:							
		A							
Parameter	CAS No.	WV_Background Soil (Mean) mg/kg	Result	Flag	Result	Flag	Result	Flag	
Aluminum	7429-90-5	52921	15600		17000		15900		
Antimony	7440-36-0	0.61							
Arsenic	7440-38-2	8.3	18.2		21.3		43.9		
Barium	7440-39-3	380	168		269		142		
Beryllium	7440-41-7	1.9	3		2.5		1.9		
Cadmium	7440-43-9	0.3	1.8				0.92		
Calcium	7440-70-2	1568	44500		36200		13600		
Chromium	7440-47-3	40.5	71.3		43.9		76.3		
Cobalt	7440-48-4	14			6.8		9		
Copper	7440-50-8	17.5	38.6		25.1		64.1		
Iron	7439-89-6	26256	63500		44700		58500		
Lead	7439-92-1	24.8	136		129		151		
Magnesium	7439-95-4	3414	16000		10700		4420		
Manganese	7439-96-5	907	1990		5510		1870		
Nickel	7440-02-0	20.4	19.4		21.4		21.4		
Potassium	7440-09-7	13650	1960		1550		1470		
Selenium	7782-49-2	0.5							
Silver	7440-22-4	<1							
Sodium	7440-23-5	1991							
Thallium	7440-28-0	0.5							
Vanadium	7440-62-2	63	42.9		47.5		58.9		
Zinc	7440-66-6	67	635		575		447		
Mercury	7439-97-6	0.06			0.16				
Hexavalent Chromium	18540-29-9								
SOLIDS, PERCENT			66.2		79.4		59.9		

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Visual Estimation
ANALYTICAL REPORT
FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION				ANALYSIS INFORMATION				ABBREVIATED NOTES		
Site/Project Name:	R35754	**Lab Name:**	EMSL04	**Method:**	**Analysis By:**	A. Burke	**Data Entry Date** 3/9/2020	(a) Valid QA Types:	(b) Valid Mineral Types: **AC** - actinolite **AM** - amosite **AN** - anthophyllite **CH** - chrysotile	(c) OM Description Standard Selections:
State/Federal Site/Project Identifier:	R35754	**Lab Job Number:**	042004637		**Analysis Date:**	3/5/2020	**QA by** B. Beatty	**Not QA** - Not a QA sample	**CR** - crocidolite **TR** - tremolite **WRTA** - winchite/richterite/tremolite/actinolite **OA** - other amphibole	*Taconite*
Site/Project Identifier Code:	R35754	**Date Received by lab:**	02/21/20	EPA 600_VE	**Data Entry by**	M. Smollock	**QA Date** 3/10/2020	**LD** - Lab Duplicate	**NAM** - non-asbestis material **OM** - other mineral type (specify in "other mineral description" field)	*Erionite*

Enter percentage as a value, not a fraction (Example: Enter 50% as 50, not 0.50).

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Sample Appearance	Ref Material	Base Mineral Type of Reference Material (b)	Actinolite (AC)			Amosite (AM)			Anthophyllite (AN)			Chrysotile (CH)			Crocidolite (CR)			Tremolite (TR)			winchite/richterite/ tremolite/actinolite (WRTA)			Other Amphibole (OA)			Non-asbestos Material (NAM)			Other Mineral Type (OM)				Deviation?	Comments
									Qual	AC-AF (%)	AC-MF (%)	Qual	AM-AF (%)	AM-MF (%)	Qual	AN-AF (%)	AN-MF (%)	Qual	CH-AF (%)	CH-MF (%)	Qual	CR-AF (%)	CR-MF (%)	Qual	TR-AF (%)	TR-MF (%)	Qual	WRTA-AF (%)	WRTA-MF (%)	Qual	OA-AF (%)	OA-MF (%)	Qual	NAM-AF (%)	NAM-MF (%)	Qual	OM-AF (%)	OM-MF (%)	OM Type (c)		
SS-01	Soil			Not QA	042004637-0001	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-02	Soil			Not QA	042004637-0002	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-03	Soil			Not QA	042004637-0003	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-04	Soil			Not QA	042004637-0004	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-05	Soil			Not QA	042004637-0005	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-06	Soil			Not QA	042004637-0006	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-07	Soil			Not QA	042004637-0007	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-08	Soil			Not QA	042004637-0008	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-09	Soil			Not QA	042004637-0009	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-10	Soil			Not QA	042004637-0010	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-11	Soil			Not QA	042004637-0011	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-12	Soil			Not QA	042004637-0012	Brown-Non-Fib	Tremolite	TR	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - OA 3/5/2020
SS-13	Soil			Not QA	042004637-0013	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-14	Soil			Not QA	042004637-0014	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-15	Soil			Not QA	042004637-0015	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-16	Soil			Not QA	042004637-0016	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-17	Soil			Not QA	042004637-0017	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-18	Soil			Not QA	042004637-0018	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-19	Soil			Not QA	042004637-0019	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-01	Soil			LD	042004637-0001	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil			LD	042004637-0007	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil			LD	042004637-0012	Brown-Non-Fib	Actinolite	AC	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

Table 5 - Soil Samples
Asbestos Results

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

Site or Project Name:	R35754
State/Federal Site or Project Identifier:	R35754
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job No:	042004637
Date received by lab:	02/21/20
Analyzed by:	A. Burke
Analysis Date:	3/5/2020

Point Count Method:	EPA 600_PC
Data Entry by:	M. Smollock
Data Entry Date:	3/9/2020
QA by:	B. Beatty
QA Date:	3/10/2020

ABBREVIATED NOTES:

(a) Valid QA Types:

Not QA	Not a QA sample
LD	Lab Duplicate

(b) Valid Mineral Types:

AC	actinolite	WRTA	winchite/richterite/tremolite/actinolite
AM	amosite	OA	other amphibole
AN	anthophyllite	NAM	non-asbestos material
CH	chrysotile	OM	other mineral type
CR	crocidolite		(c)*OM Description Standard Selections:*
TR	tremolite		*Taconite*
			Erionite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)											Deviation?	Comments
							AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (c)		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	<0.25% CH - OA 3/5/2020
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

Table 5 - Soil Samples
Asbestos Results

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

ANALYTICAL REPORT

FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION		ANALYSIS INFORMATION			ABBREVIATED NOTES	
Site/Project Name:	R35754	**Method:**	**Analysis By:**	A. Burke	(a) Valid QA Types:	(b) Valid Mineral Types:
State/Federal Site/Project Identifier:	R35754	EPA 600_PC	**Analysis Date:**	3/5/2020	**Not QA** - Not a QA sample	**AC** - actinolite **AM** - amosite **AN** - anthophyllite
Site/Project Identifier Code:	R35754		**Data Entry by:**	M. Smollock	**LD** - Lab Duplicate	**CH** - chrysotile **CR** - crocidolite **TR** - tremolite
Lab Name:	EMSL04		**Data Entry Date:**	3/9/2020	(c) OM Description Standard Selections:	**WRTA** - winchite/richterite/tremolite/actinolite
Lab Job Number:	042004637		**QA by:**	B. Beatty		**OA** - other amphibole NAM - non-asbestis material
Date Received by lab:	02/21/20		**QA Date:**	3/10/2020	*Taconite* *Erionite*	**OM** - other mineral type (specify in "other mineral description" field)

							Grav. Reduction		Concentration (%) for each mineral type (b)												
Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (b)	**Total (%)**
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000												0.0
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000												0.0
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000												0.0
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000												0.0
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000												0.0
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000												0.0
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000												0.0
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000												0.0
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000												0.0
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000												0.0
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000												0.0
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000												0.0
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000												0.0
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000												0.0
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000												0.0
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000												0.0
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000												0.0
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000												0.0

ATTACHMENT 1

CHAIN-OF-CUSTODY/TRAFFIC REPORTS

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818097875

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
Case #: 48747
Cooler #: K30

No: 3-022020-130922-0003
Lab: Bonner Analytical Testing Company
Lab Contact: Max Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	MC0AB2	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1048 (6 C) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	MC0AB3	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1053 (6 C) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	MC0AB4	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1056 (6 C) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	MC0AB5	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1059 (6 C) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	MC0AB6	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1062 (6 C) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	MC0AB7	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1065 (6 C) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	MC0AB8	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1068 (6 C) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	MC0AB9	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1071 (6 C) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	MC0AC0	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1074 (6 C) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	MC0AC1	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1077 (6 C) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	MC0AC2	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1080 (6 C) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	MC0AC3	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1083 (6 C) (1)	P-11	02/19/2020 13:25	Field Sample

Sample(s) to be used for Lab QC: SS-01 Tag 3-1048 - Special Instructions: Please return cooler with FedEx return label inside	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: TM+Hg=CLP TAL ICP-AES Metals + Hg	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818097875

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
Case #: 48747
Cooler #: K30

No: 3-022020-130922-0003
Lab: Bonner Analytical Testing Company
Lab Contact: Max Bonner
Lab Phone: 601-264-2854

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-13	MC0AC4	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1086 (6 C) (1)	P-12	02/19/2020 13:30	Field Sample
SS-14	MC0AC5	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1089 (6 C) (1)	P-12	02/19/2020 13:40	Dupe of SS-13
SS-15	MC0AC6	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1092 (6 C) (1)	P-13	02/19/2020 14:07	Field Sample
SS-16	MC0AC7	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1095 (6 C) (1)	P-14	02/19/2020 14:23	Field Sample
SS-17	MC0AC8	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1098 (6 C) (1)	B-15	02/19/2020 14:45	Field Sample
SS-18	MC0AC9	Soil/ Matthew Ridgway	Grab	TM+Hg(21)	3-1101 (6 C) (1)	B-16	02/19/2020 15:10	Field Sample
SS-19	MC0AD0	Soil/ Ben Evick	Grab	TM+Hg(21)	3-1104 (6 C) (1)	B-17	02/19/2020 15:35	Field Sample
RB-01	MC0AD1	Water/ Matthew Ridgway	Grab	TM+Hg(21)	3-1107 (HNO3 pH<2) (1)	Z	02/19/2020 07:30	Rinsate Blank

Special Instructions: Please return cooler with FedEx return label inside

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: TM+Hg=CLP TAL ICP-AES Metals + Hg

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818186723

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
DAS #: R35756
Cooler #: K5

No: 3-022020-125952-0002
Lab: USEPA Region III Environmental Science Center
Lab Contact: Kevin Poff
Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	R35756-01	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1052 (6 C) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	R35756-02	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1055 (6 C) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	R35756-03	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1058 (6 C) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	R35756-04	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1061 (6 C) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	R35756-05	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1064 (6 C) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	R35756-06	Soil/ Ben Evick	Grab	Cr+6(21)	3-1067 (6 C) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	R35756-07	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1070 (6 C) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	R35756-08	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1073 (6 C) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	R35756-09	Soil/ Ben Evick	Grab	Cr+6(21)	3-1076 (6 C) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	R35756-10	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1079 (6 C) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	R35756-11	Soil/ Ben Evick	Grab	Cr+6(21)	3-1082 (6 C) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	R35756-12	Soil/ Ben Evick	Grab	Cr+6(21)	3-1085 (6 C) (1)	P-11	02/19/2020 13:25	Field Sample

Sample(s) to be used for Lab QC: SS-01 Tag 3-1052 - Special Instructions: Please return cooler with FedEx return label inside	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: Cr+6=Hexavalent Chromium	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818186723

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
DAS #: R35756
Cooler #: K5

No: 3-022020-125952-0002
Lab: USEPA Region III Environmental Science Center
Lab Contact: Kevin Poff
Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-13	R35756-13	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1088 (6 C) (1)	P-12	02/19/2020 13:30	Field Sample
SS-14	R35756-14	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1091 (6 C) (1)	P-12	02/19/2020 13:40	Dupe of SS-13
SS-15	R35756-15	Soil/ Ben Evick	Grab	Cr+6(21)	3-1094 (6 C) (1)	P-13	02/19/2020 14:07	Field Sample
SS-16	R35756-16	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1097 (6 C) (1)	P-14	02/19/2020 14:23	Field Sample
SS-17	R35756-17	Soil/ Ben Evick	Grab	Cr+6(21)	3-1100 (6 C) (1)	B-15	02/19/2020 14:45	Field Sample
SS-18	R35756-18	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1103 (6 C) (1)	B-16	02/19/2020 15:10	Field Sample
SS-19	R35756-19	Soil/ Ben Evick	Grab	Cr+6(21)	3-1106 (6 C) (1)	B-17	02/19/2020 15:35	Field Sample
RB-01	R35756-R1	Water/ Matthew Ridgway	Grab	Cr+6(21)	3-1108 (NH_4OH/$(NH_4)_2SO_4$ pH 9.5) (1)	Z	02/19/2020 07:30	Rinsate Blank

Special Instructions: Please return cooler with FedEx return label inside

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Cr+6=Hexavalent Chromium

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777817941333

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
DAS #: R35754
Cooler #: K27

No: 3-022020-124148-0001
Lab: EMSL Analytical, Inc.
Lab Contact: Robyn Ray
Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-01	R35754-01	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1050 (None) (1)	P-01	02/19/2020 09:15	Field Sample
SS-02	R35754-02	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1054 (None) (1)	P-02	02/19/2020 09:37	Field Sample
SS-03	R35754-03	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1057 (None) (1)	P-03	02/19/2020 10:05	Field Sample
SS-04	R35754-04	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1060 (None) (1)	P-03	02/19/2020 10:10	Dupe of SS-03
SS-05	R35754-05	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1063 (None) (1)	P-04	02/19/2020 10:20	Field Sample
SS-06	R35754-06	Soil/ Ben Evick	Grab	Asbest(21)	3-1066 (None) (1)	P-05	02/19/2020 10:35	Field Sample
SS-07	R35754-07	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1069 (None) (1)	P-06	02/19/2020 10:50	Field Sample
SS-08	R35754-08	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1072 (None) (1)	P-07	02/19/2020 11:15	Field Sample
SS-09	R35754-09	Soil/ Ben Evick	Grab	Asbest(21)	3-1075 (None) (1)	P-08	02/19/2020 11:50	Field Sample
SS-10	R35754-10	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1078 (None) (1)	P-09	02/19/2020 11:55	Field Sample
SS-11	R35754-11	Soil/ Ben Evick	Grab	Asbest(21)	3-1081 (None) (1)	P-10	02/19/2020 12:20	Field Sample
SS-12	R35754-12	Soil/ Ben Evick	Grab	Asbest(21)	3-1084 (None) (1)	P-11	02/19/2020 13:25	Field Sample

Special Instructions: Please return cooler with FedEx return label	**Shipment for Case Complete? Y**
	Samples Transferred From Chain of Custody #
Analysis Key: Asbest=Asbestos	

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

USEPA CLP COC (REGION COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777817941333

CHAIN OF CUSTODY RECORD
Weirton BOP Implosion Site/WV
DAS #: R35754
Cooler #: K27

No: 3-022020-124148-0001
Lab: EMSL Analytical, Inc.
Lab Contact: Robyn Ray
Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	Sample Type
SS-13	R35754-13	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1087 (None) (1)	P-12	02/19/2020 13:30	Field Sample
SS-14	R35754-14	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1090 (None) (1)	P-12	02/19/2020 13:40	Dupe of SS-13
SS-15	R35754-15	Soil/ Ben Evick	Grab	Asbest(21)	3-1093 (None) (1)	P-13	02/19/2020 14:07	Field Sample
SS-16	R35754-16	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1096 (None) (1)	P-14	02/19/2020 14:23	Field Sample
SS-17	R35754-17	Soil/ Ben Evick	Grab	Asbest(21)	3-1099 (None) (1)	B-15	02/19/2020 14:45	Field Sample
SS-18	R35754-18	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1102 (None) (1)	B-16	02/19/2020 15:10	Field Sample
SS-19	R35754-19	Soil/ Ben Evick	Grab	Asbest(21)	3-1105 (None) (1)	B-17	02/19/2020 15:35	Field Sample

Special Instructions: Please return cooler with FedEx return label

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Asbest=Asbestos

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt

ATTACHMENT 2

DATA VALIDATION REPORT
TOTAL METALS AND MERCURY

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: 5/5/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill
Region III ESAT RPO (3LS20)

TO: DEBORAH LINDSEY
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for RAS# 48747; SDG# MC8TR1 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc: Joe Carter
Gene Nance

TO: #0002 TDF: #0320061

ICF
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3012

Date: May 4, 2020

To: ESAT Region 3 Project Officer

From: Mahboobeh Mecanic
Validator

Lisa D. Penix
Reviewer

Subject: Inorganic Data Validation (S4VEM)
Weirton BOP Implosion
48747, MC8TR1

Overview

This data package consisted of nineteen (19) soil samples including two field duplicate pairs analyzed for total metals by ICP-AES and for mercury (Hg) by cold vapor atomic absorption technique.

Analysis was performed by Bonner Analytical Testing Company (BON) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM02.4.

Data were validated according to the National Functional Guidelines for Inorganic Superfund Methods Data Review and applicable USEPA Region 3 modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The validation report has been assigned the Superfund Data Validation Label Stage_3_Validation_Electronic_Manual (S3VEM).

The following validation narrative is an evaluation of laboratory reported data based on the reconciliation electronic data package available through the EXES Data Manager dated March 17, 2020.

Rinsate blank MC0AD1 (analyzed in SDG MCBTR2) was used in evaluating blank contamination for the associated samples in this case based on sampling date.

Summary

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. A matrix spike outlier and blank contamination issues resulted in estimated sample results for several analytes.

Minor Problems

Laboratory instrumentation reported negative values greater than absolute value of the Method Detection Limits (MDL) for thallium (Tl) and Hg in blank analyses. Positive results less than the Contract Required Quantitation Limits (CRQLs) for these analytes have been reported at the CRQL and qualified "UJ". Quantitation limits for these analytes are estimated and qualified "UJ".

The matrix spike recovery was low (<75%) for antimony (Sb) in sample MC0AB2. The post digestion spike recovery was within limits. The quantitation limit for Sb is estimated in this sample and has been qualified "UJ".

Notes

Analytes detected below the CRQLs are estimated and have been qualified "J".

Antimony (Sb), beryllium (Be), cadmium (Cd), cobalt (Co), silver (Ag) and sodium (Na) have been detected in laboratory blanks associated with the sample in this SDG. Concentrations of these analytes which were less than the CRQL have been reported at the CRQL and qualified "U".

No positive results were reported for the associated rinsate blank. No data were qualified based on the rinsate blank.

Laboratory duplicate, serial dilution and Laboratory Control Sample (LCS) analyses reported acceptable results.

The matrix spike recovery was outside control limits for lead (Pb) in sample MC0AB2. The initial concentration for Pb was greater than four times (>4X) the amount of the spike added. No data were qualified.

Concentrations for the following analytes exceeded the calibration range in the initial analysis of samples listed. These samples were reanalyzed at dilution to bring the concentration of the analyte within the calibration range. Results for these analytes are reported from dilution.

Sample	DF	Analyte(s)
MC0AB4	5X	Iron (Fe), Manganese (Mn)
MC0AB5	3X	Fe, Mn
MC0AC2	2X	Mn
MC0AC8, MC0AD0	2X	Fe
MC0AC9	5X	Mn

Results for the field duplicate pairs, samples MC0AB4/MC0AB5 and MC0AC4/MC0AC5, were within ± CRQL, 25% RPD except for calcium (Ca) in duplicate pair MC0AB4/MC0AB5. Data are not qualified based on field duplicate precision. No data were qualified based on this finding.

All Sample numbers in this SDG were previously used by the laboratory in their LIMS as an SDG number. Per the Region, the SDG number for this case was changed to MC8TR1.

Sample calculation checks were performed for several analytes in several samples. All calculated results had RPDs less than 5% of the reported results. No sample data were qualified.

Validation qualifiers are only applied by the validator to field samples. Qualifiers may be applied by EXES electronic validation to laboratory quality control samples.

Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	42.2		mg/kg	42.2		1	YES	NV
Antimony	Spike	12.1		mg/kg	12.1		1	YES	NV
Arsenic	Spike	1.9		mg/kg	1.9		1	YES	NV
Barium	Spike	41.7		mg/kg	41.7		1	YES	NV
Beryllium	Spike	1.0		mg/kg	1.0		1	YES	NV
Cadmium	Spike	1.1		mg/kg	1.1		1	YES	NV
Calcium	Spike	1080		mg/kg	1080		1	YES	NV
Chromium	Spike	2.3		mg/kg	2.3		1	YES	NV
Cobalt	Spike	10.9		mg/kg	10.9		1	YES	NV
Copper	Spike	5.6		mg/kg	5.6		1	YES	NV
Iron	Spike	21.6		mg/kg	21.6		1	YES	NV
Lead	Spike	2.1		mg/kg	2.1		1	YES	NV
Magnesium	Spike	1050		mg/kg	1050		1	YES	NV
Manganese	Spike	3.3		mg/kg	3.3		1	YES	NV
Nickel	Spike	8.6		mg/kg	8.6		1	YES	NV
Potassium	Spike	1000		mg/kg	1000		1	YES	NV
Selenium	Spike	7.2		mg/kg	7.2		1	YES	NV
Silver	Spike	1.1		mg/kg	1.1		1	YES	NV
Sodium	Spike	1020		mg/kg	1020		1	YES	NV
Thallium	Spike	5.0		mg/kg	5.0		1	YES	NV
Vanadium	Spike	10.9		mg/kg	10.9		1	YES	NV
Zinc	Spike	13.5		mg/kg	13.5		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-01	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.026	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-01	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15600		mg/kg	15600		1	YES	S4VEM
Antimony	Target	8.3	UJ	mg/kg	1.5	J*	1	YES	S4VEM
Arsenic	Target	11.2		mg/kg	11.2		1	YES	S4VEM
Barium	Target	84.9		mg/kg	84.9		1	YES	S4VEM
Beryllium	Target	0.69	U	mg/kg	0.68	J	1	YES	S4VEM
Cadmium	Target	0.69	U	mg/kg	0.13	J	1	YES	S4VEM
Calcium	Target	4060		mg/kg	4060		1	YES	S4VEM
Chromium	Target	60.6		mg/kg	60.6		1	YES	S4VEM
Cobalt	Target	10.8		mg/kg	10.8		1	YES	S4VEM
Copper	Target	23.0		mg/kg	23.0		1	YES	S4VEM
Iron	Target	34100		mg/kg	34100		1	YES	S4VEM
Lead	Target	31.4		mg/kg	31.4		1	YES	S4VEM
Magnesium	Target	3390		mg/kg	3390		1	YES	S4VEM
Manganese	Target	1250		mg/kg	1250		1	YES	S4VEM
Nickel	Target	23.5		mg/kg	23.5		1	YES	S4VEM
Potassium	Target	1810		mg/kg	1810		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.22	J	1	YES	S4VEM
Sodium	Target	693	U	mg/kg	51.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	41.4		mg/kg	41.4		1	YES	S4VEM
Zinc	Target	205		mg/kg	205		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2A	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	17.4		mg/kg	17.4		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2D	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.031	J	mg/kg	0.031	J	1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2D	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15000		mg/kg	15000		1	YES	NV
Antimony	Target	1.3	J	mg/kg	1.3	J	1	YES	NV
Arsenic	Target	11.4		mg/kg	11.4		1	YES	NV
Barium	Target	81.1		mg/kg	81.1		1	YES	NV
Beryllium	Target	0.65	J	mg/kg	0.65	J	1	YES	NV
Cadmium	Target	0.15	J	mg/kg	0.15	J	1	YES	NV
Calcium	Target	4520		mg/kg	4520		1	YES	NV
Chromium	Target	59.8		mg/kg	59.8		1	YES	NV
Cobalt	Target	10.9		mg/kg	10.9		1	YES	NV
Copper	Target	22.0		mg/kg	22.0		1	YES	NV
Iron	Target	32400		mg/kg	32400		1	YES	NV
Lead	Target	28.0		mg/kg	28.0		1	YES	NV
Magnesium	Target	3310		mg/kg	3310		1	YES	NV
Manganese	Target	1200		mg/kg	1200		1	YES	NV
Nickel	Target	22.3		mg/kg	22.3		1	YES	NV
Potassium	Target	1700		mg/kg	1700		1	YES	NV
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	NV
Silver	Target	0.23	J	mg/kg	0.23	J	1	YES	NV
Sodium	Target	47.4	J	mg/kg	47.4	J	1	YES	NV
Thallium	Target	3.5	U	mg/kg	3.5	U	1	YES	NV
Vanadium	Target	40.4		mg/kg	40.4		1	YES	NV
Zinc	Target	194		mg/kg	194		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2L	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15500		mg/kg	15500		5	YES	NV
Antimony	Target	1.5	J	mg/kg	1.5	J	5	YES	NV
Arsenic	Target	10.7		mg/kg	10.7		5	YES	NV
Barium	Target	83.2	J	mg/kg	83.2	J	5	YES	NV
Beryllium	Target	0.64	J	mg/kg	0.64	J	5	YES	NV
Cadmium	Target	0.12	J	mg/kg	0.12	J	5	YES	NV
Calcium	Target	4110		mg/kg	4110		5	YES	NV
Chromium	Target	61.9		mg/kg	61.9		5	YES	NV
Cobalt	Target	11.0	J	mg/kg	11.0	J	5	YES	NV
Copper	Target	24.2		mg/kg	24.2		5	YES	NV
Iron	Target	35000		mg/kg	35000		5	YES	NV
Lead	Target	29.6		mg/kg	29.6		5	YES	NV
Magnesium	Target	3440	J	mg/kg	3440	J	5	YES	NV
Manganese	Target	1270		mg/kg	1270		5	YES	NV
Nickel	Target	21.8	J	mg/kg	21.8	J	5	YES	NV
Potassium	Target	1810	J	mg/kg	1810	J	5	YES	NV
Selenium	Target	24.3	U	mg/kg	24.3	U	5	YES	NV
Silver	Target	0.52	J	mg/kg	0.52	J	5	YES	NV
Sodium	Target	37.5	J	mg/kg	37.5	J	5	YES	NV
Thallium	Target	17.3	U	mg/kg	17.3	U	5	YES	NV
Vanadium	Target	41.2		mg/kg	41.2		5	YES	NV
Zinc	Target	191		mg/kg	191		5	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2S	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Spike	0.82		mg/kg	0.82		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB2S	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date: 02/19/2020	Sample Time: 09:15:00
% Moisture:		% Solids: 66.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Antimony	Spike	10.9		mg/kg	10.9	*	1	YES	NV
Arsenic	Spike	23.1		mg/kg	23.1		1	YES	NV
Barium	Spike	624		mg/kg	624		1	YES	NV
Beryllium	Spike	14.1		mg/kg	14.1		1	YES	NV
Cadmium	Spike	13.2		mg/kg	13.2		1	YES	NV
Chromium	Spike	124		mg/kg	124		1	YES	NV
Cobalt	Spike	141		mg/kg	141		1	YES	NV
Copper	Spike	88.2		mg/kg	88.2		1	YES	NV
Lead	Spike	34.2		mg/kg	34.2		1	YES	NV
Manganese	Spike	1410		mg/kg	1410		1	YES	NV
Nickel	Spike	163		mg/kg	163		1	YES	NV
Selenium	Spike	23.9		mg/kg	23.9		1	YES	NV
Silver	Spike	13.6		mg/kg	13.6		1	YES	NV
Thallium	Spike	14.0		mg/kg	14.0		1	YES	NV
Vanadium	Spike	186		mg/kg	186		1	YES	NV
Zinc	Spike	358		mg/kg	358		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB3	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-02	pH:	Sample Date: 02/19/2020	Sample Time: 09:37:00
% Moisture:		% Solids: 77.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.12	UJ	mg/kg	0.12	U	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB3	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-02	pH:	Sample Date: 02/19/2020	Sample Time: 09:37:00
% Moisture:		% Solids: 77.6	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16400		mg/kg	16400		1	YES	S4VEM
Antimony	Target	7.3	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	18.1		mg/kg	18.1		1	YES	S4VEM
Barium	Target	192		mg/kg	192		1	YES	S4VEM
Beryllium	Target	1.0		mg/kg	1.0		1	YES	S4VEM
Cadmium	Target	0.93		mg/kg	0.93		1	YES	S4VEM
Calcium	Target	8040		mg/kg	8040		1	YES	S4VEM
Chromium	Target	41.9		mg/kg	41.9		1	YES	S4VEM
Cobalt	Target	12.8		mg/kg	12.8		1	YES	S4VEM
Copper	Target	31.7		mg/kg	31.7		1	YES	S4VEM
Iron	Target	34100		mg/kg	34100		1	YES	S4VEM
Lead	Target	246		mg/kg	246		1	YES	S4VEM
Magnesium	Target	4410		mg/kg	4410		1	YES	S4VEM
Manganese	Target	1110		mg/kg	1110		1	YES	S4VEM
Nickel	Target	28.8		mg/kg	28.8		1	YES	S4VEM
Potassium	Target	2150		mg/kg	2150		1	YES	S4VEM
Selenium	Target	4.3	U	mg/kg	4.3	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.32	J	1	YES	S4VEM
Sodium	Target	608	U	mg/kg	74.9	J	1	YES	S4VEM
Thallium	Target	3.0	UJ	mg/kg	3.0	U	1	YES	S4VEM
Vanadium	Target	36.5		mg/kg	36.5		1	YES	S4VEM
Zinc	Target	3010		mg/kg	3010		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB4	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-03	pH:	Sample Date: 02/19/2020	Sample Time: 10:05:00
% Moisture:		% Solids: 77.5	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.32		mg/kg	0.32		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB4	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-03	pH:	Sample Date: 02/19/2020	Sample Time: 10:05:00
% Moisture:		% Solids: 77.5	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12900		mg/kg	12900		1	YES	S4VEM
Antimony	Target	7.2	U	mg/kg	5.2	J*	1	YES	S4VEM
Arsenic	Target	20.1		mg/kg	20.1		1	YES	S4VEM
Barium	Target	285		mg/kg	285		1	YES	S4VEM
Beryllium	Target	0.80		mg/kg	0.80		1	YES	S4VEM
Cadmium	Target	2.4		mg/kg	2.4		1	YES	S4VEM
Calcium	Target	19400		mg/kg	19400		1	YES	S4VEM
Chromium	Target	218		mg/kg	218		1	YES	S4VEM
Cobalt	Target	11.2		mg/kg	11.2		1	YES	S4VEM
Copper	Target	204		mg/kg	204		1	YES	S4VEM
Iron	Target	62700		mg/kg	62700	D	5	YES	S4VEM
Lead	Target	382		mg/kg	382		1	YES	S4VEM
Magnesium	Target	5060		mg/kg	5060		1	YES	S4VEM
Manganese	Target	4670		mg/kg	4670	D	5	YES	S4VEM
Nickel	Target	32.2		mg/kg	32.2		1	YES	S4VEM
Potassium	Target	1920		mg/kg	1920		1	YES	S4VEM
Selenium	Target	4.2	U	mg/kg	4.2	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.83	J	1	YES	S4VEM
Sodium	Target	597	U	mg/kg	95.3	J	1	YES	S4VEM
Thallium	Target	3.0	UJ	mg/kg	0.43	J	1	YES	S4VEM
Vanadium	Target	96.4		mg/kg	96.4		1	YES	S4VEM
Zinc	Target	1000		mg/kg	1000		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB5	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-03	pH:	Sample Date: 02/19/2020	Sample Time: 10:10:00
% Moisture:		% Solids: 80.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.25		mg/kg	0.25		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB5	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-03	pH:	Sample Date: 02/19/2020	Sample Time: 10:10:00
% Moisture:		% Solids: 80.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12400		mg/kg	12400		1	YES	S4VEM
Antimony	Target	6.9	U	mg/kg	4.6	J*	1	YES	S4VEM
Arsenic	Target	20.3		mg/kg	20.3		1	YES	S4VEM
Barium	Target	249		mg/kg	249		1	YES	S4VEM
Beryllium	Target	0.83		mg/kg	0.83		1	YES	S4VEM
Cadmium	Target	2.1		mg/kg	2.1		1	YES	S4VEM
Calcium	Target	13900		mg/kg	13900		1	YES	S4VEM
Chromium	Target	186		mg/kg	186		1	YES	S4VEM
Cobalt	Target	10.6		mg/kg	10.6		1	YES	S4VEM
Copper	Target	210		mg/kg	210		1	YES	S4VEM
Iron	Target	64700		mg/kg	64700	D	3	YES	S4VEM
Lead	Target	361		mg/kg	361		1	YES	S4VEM
Magnesium	Target	4570		mg/kg	4570		1	YES	S4VEM
Manganese	Target	4000		mg/kg	4000	D	3	YES	S4VEM
Nickel	Target	26.7		mg/kg	26.7		1	YES	S4VEM
Potassium	Target	1820		mg/kg	1820		1	YES	S4VEM
Selenium	Target	4.0	U	mg/kg	4.0	U	1	YES	S4VEM
Silver	Target	1.1	U	mg/kg	0.73	J	1	YES	S4VEM
Sodium	Target	573	U	mg/kg	96.7	J	1	YES	S4VEM
Thallium	Target	2.9	UJ	mg/kg	2.9	U	1	YES	S4VEM
Vanadium	Target	87.7		mg/kg	87.7		1	YES	S4VEM
Zinc	Target	927		mg/kg	927		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB6	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-04	pH:	Sample Date: 02/19/2020	Sample Time: 10:20:00
% Moisture:		% Solids: 68.3	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.31		mg/kg	0.31		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB6	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-04	pH:	Sample Date: 02/19/2020	Sample Time: 10:20:00
% Moisture:		% Solids: 68.3	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14300		mg/kg	14300		1	YES	S4VEM
Antimony	Target	8.4	U	mg/kg	1.9	J*	1	YES	S4VEM
Arsenic	Target	17.1		mg/kg	17.1		1	YES	S4VEM
Barium	Target	236		mg/kg	236		1	YES	S4VEM
Beryllium	Target	1.2		mg/kg	1.2		1	YES	S4VEM
Cadmium	Target	1.4		mg/kg	1.4		1	YES	S4VEM
Calcium	Target	11500		mg/kg	11500		1	YES	S4VEM
Chromium	Target	54.7		mg/kg	54.7		1	YES	S4VEM
Cobalt	Target	11.4		mg/kg	11.4		1	YES	S4VEM
Copper	Target	45.2		mg/kg	45.2		1	YES	S4VEM
Iron	Target	35900		mg/kg	35900		1	YES	S4VEM
Lead	Target	485		mg/kg	485		1	YES	S4VEM
Magnesium	Target	3720		mg/kg	3720		1	YES	S4VEM
Manganese	Target	1460		mg/kg	1460		1	YES	S4VEM
Nickel	Target	22.6		mg/kg	22.6		1	YES	S4VEM
Potassium	Target	2330		mg/kg	2330		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.34	J	1	YES	S4VEM
Sodium	Target	704	U	mg/kg	84.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	38.8		mg/kg	38.8		1	YES	S4VEM
Zinc	Target	682		mg/kg	682		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB7	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-05	pH:	Sample Date: 02/19/2020	Sample Time: 10:35:00
% Moisture:		% Solids: 67.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.13	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB7	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-05	pH:	Sample Date: 02/19/2020	Sample Time: 10:35:00
% Moisture:		% Solids: 67.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13200		mg/kg	13200		1	YES	S4VEM
Antimony	Target	8.6	U	mg/kg	1.5	J*	1	YES	S4VEM
Arsenic	Target	11.6		mg/kg	11.6		1	YES	S4VEM
Barium	Target	113		mg/kg	113		1	YES	S4VEM
Beryllium	Target	0.85		mg/kg	0.85		1	YES	S4VEM
Cadmium	Target	0.71	U	mg/kg	0.64	J	1	YES	S4VEM
Calcium	Target	7160		mg/kg	7160		1	YES	S4VEM
Chromium	Target	43.1		mg/kg	43.1		1	YES	S4VEM
Cobalt	Target	8.3		mg/kg	8.3		1	YES	S4VEM
Copper	Target	33.4		mg/kg	33.4		1	YES	S4VEM
Iron	Target	30200		mg/kg	30200		1	YES	S4VEM
Lead	Target	114		mg/kg	114		1	YES	S4VEM
Magnesium	Target	2800		mg/kg	2800		1	YES	S4VEM
Manganese	Target	826		mg/kg	826		1	YES	S4VEM
Nickel	Target	19.9		mg/kg	19.9		1	YES	S4VEM
Potassium	Target	1790		mg/kg	1790		1	YES	S4VEM
Selenium	Target	5.0	U	mg/kg	5.0	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.23	J	1	YES	S4VEM
Sodium	Target	715	U	mg/kg	62.0	J	1	YES	S4VEM
Thallium	Target	3.6	UJ	mg/kg	3.6	U	1	YES	S4VEM
Vanadium	Target	32.5		mg/kg	32.5		1	YES	S4VEM
Zinc	Target	353		mg/kg	353		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB8	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-06	pH:	Sample Date: 02/19/2020	Sample Time: 10:50:00
% Moisture:		% Solids: 60.7	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16	UJ	mg/kg	0.035	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB8	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-06	pH:	Sample Date: 02/19/2020	Sample Time: 10:50:00
% Moisture:		% Solids: 60.7	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16100		mg/kg	16100		1	YES	S4VEM
Antimony	Target	9.6	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	10.0		mg/kg	10.0		1	YES	S4VEM
Barium	Target	107		mg/kg	107		1	YES	S4VEM
Beryllium	Target	1.3		mg/kg	1.3		1	YES	S4VEM
Cadmium	Target	0.80	U	mg/kg	0.18	J	1	YES	S4VEM
Calcium	Target	9090		mg/kg	9090		1	YES	S4VEM
Chromium	Target	44.8		mg/kg	44.8		1	YES	S4VEM
Cobalt	Target	12.4		mg/kg	12.4		1	YES	S4VEM
Copper	Target	28.3		mg/kg	28.3		1	YES	S4VEM
Iron	Target	33300		mg/kg	33300		1	YES	S4VEM
Lead	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Magnesium	Target	4960		mg/kg	4960		1	YES	S4VEM
Manganese	Target	991		mg/kg	991		1	YES	S4VEM
Nickel	Target	33.5		mg/kg	33.5		1	YES	S4VEM
Potassium	Target	2500		mg/kg	2500		1	YES	S4VEM
Selenium	Target	5.6	U	mg/kg	5.6	U	1	YES	S4VEM
Silver	Target	1.6	U	mg/kg	0.13	J	1	YES	S4VEM
Sodium	Target	800	U	mg/kg	83.3	J	1	YES	S4VEM
Thallium	Target	4.0	UJ	mg/kg	4.0	U	1	YES	S4VEM
Vanadium	Target	33.0		mg/kg	33.0		1	YES	S4VEM
Zinc	Target	1110		mg/kg	1110		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB9	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-07	pH:	Sample Date: 02/19/2020	Sample Time: 11:15:00
% Moisture:		% Solids: 68.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.056	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AB9	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-07	pH:	Sample Date: 02/19/2020	Sample Time: 11:15:00
% Moisture:		% Solids: 68.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17600		mg/kg	17600		1	YES	S4VEM
Antimony	Target	8.2	U	mg/kg	0.85	J*	1	YES	S4VEM
Arsenic	Target	8.8		mg/kg	8.8		1	YES	S4VEM
Barium	Target	142		mg/kg	142		1	YES	S4VEM
Beryllium	Target	1.0		mg/kg	1.0		1	YES	S4VEM
Cadmium	Target	0.68	U	mg/kg	0.33	J	1	YES	S4VEM
Calcium	Target	4740		mg/kg	4740		1	YES	S4VEM
Chromium	Target	42.7		mg/kg	42.7		1	YES	S4VEM
Cobalt	Target	12.3		mg/kg	12.3		1	YES	S4VEM
Copper	Target	17.2		mg/kg	17.2		1	YES	S4VEM
Iron	Target	26900		mg/kg	26900		1	YES	S4VEM
Lead	Target	41.1		mg/kg	41.1		1	YES	S4VEM
Magnesium	Target	3070		mg/kg	3070		1	YES	S4VEM
Manganese	Target	1530		mg/kg	1530		1	YES	S4VEM
Nickel	Target	23.3		mg/kg	23.3		1	YES	S4VEM
Potassium	Target	2530		mg/kg	2530		1	YES	S4VEM
Selenium	Target	4.8	U	mg/kg	4.8	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.19	J	1	YES	S4VEM
Sodium	Target	679	U	mg/kg	49.2	J	1	YES	S4VEM
Thallium	Target	3.4	UJ	mg/kg	0.68	J	1	YES	S4VEM
Vanadium	Target	36.7		mg/kg	36.7		1	YES	S4VEM
Zinc	Target	197		mg/kg	197		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC0	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-08	pH:	Sample Date: 02/19/2020	Sample Time: 11:50:00
% Moisture:		% Solids: 51.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.30		mg/kg	0.30		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC0	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-08	pH:	Sample Date: 02/19/2020	Sample Time: 11:50:00
% Moisture:		% Solids: 51.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16200		mg/kg	16200		1	YES	S4VEM
Antimony	Target	11.2	U	mg/kg	2.3	J*	1	YES	S4VEM
Arsenic	Target	15.7		mg/kg	15.7		1	YES	S4VEM
Barium	Target	121		mg/kg	121		1	YES	S4VEM
Beryllium	Target	0.93	U	mg/kg	0.87	J	1	YES	S4VEM
Cadmium	Target	2.5		mg/kg	2.5		1	YES	S4VEM
Calcium	Target	14200		mg/kg	14200		1	YES	S4VEM
Chromium	Target	66.3		mg/kg	66.3		1	YES	S4VEM
Cobalt	Target	13.0		mg/kg	13.0		1	YES	S4VEM
Copper	Target	54.1		mg/kg	54.1		1	YES	S4VEM
Iron	Target	45100		mg/kg	45100		1	YES	S4VEM
Lead	Target	189		mg/kg	189		1	YES	S4VEM
Magnesium	Target	4450		mg/kg	4450		1	YES	S4VEM
Manganese	Target	2120		mg/kg	2120		1	YES	S4VEM
Nickel	Target	30.0		mg/kg	30.0		1	YES	S4VEM
Potassium	Target	3190		mg/kg	3190		1	YES	S4VEM
Selenium	Target	6.5	U	mg/kg	6.5	U	1	YES	S4VEM
Silver	Target	1.9	U	mg/kg	0.51	J	1	YES	S4VEM
Sodium	Target	930	U	mg/kg	92.8	J	1	YES	S4VEM
Thallium	Target	4.7	UJ	mg/kg	4.7	U	1	YES	S4VEM
Vanadium	Target	43.8		mg/kg	43.8		1	YES	S4VEM
Zinc	Target	962		mg/kg	962		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC1	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-09	pH:	Sample Date: 02/19/2020	Sample Time: 11:55:00
% Moisture:		% Solids: 72.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.25		mg/kg	0.25		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC1	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-09	pH:	Sample Date: 02/19/2020	Sample Time: 11:55:00
% Moisture:		% Solids: 72.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	14800		mg/kg	14800		1	YES	S4VEM
Antimony	Target	7.6	U	mg/kg	1.9	J*	1	YES	S4VEM
Arsenic	Target	17.3		mg/kg	17.3		1	YES	S4VEM
Barium	Target	138		mg/kg	138		1	YES	S4VEM
Beryllium	Target	0.88		mg/kg	0.88		1	YES	S4VEM
Cadmium	Target	0.98		mg/kg	0.98		1	YES	S4VEM
Calcium	Target	5820		mg/kg	5820		1	YES	S4VEM
Chromium	Target	57.7		mg/kg	57.7		1	YES	S4VEM
Cobalt	Target	12.1		mg/kg	12.1		1	YES	S4VEM
Copper	Target	36.3		mg/kg	36.3		1	YES	S4VEM
Iron	Target	44400		mg/kg	44400		1	YES	S4VEM
Lead	Target	144		mg/kg	144		1	YES	S4VEM
Magnesium	Target	3460		mg/kg	3460		1	YES	S4VEM
Manganese	Target	1370		mg/kg	1370		1	YES	S4VEM
Nickel	Target	24.1		mg/kg	24.1		1	YES	S4VEM
Potassium	Target	2000		mg/kg	2000		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.50	J	1	YES	S4VEM
Sodium	Target	636	U	mg/kg	56.7	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.2	U	1	YES	S4VEM
Vanadium	Target	38.9		mg/kg	38.9		1	YES	S4VEM
Zinc	Target	463		mg/kg	463		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC2	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-10	pH:	Sample Date: 02/19/2020	Sample Time: 12:20:00
% Moisture:		% Solids: 71.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC2	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-10	pH:	Sample Date: 02/19/2020	Sample Time: 12:20:00
% Moisture:		% Solids: 71.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	16800		mg/kg	16800		1	YES	S4VEM
Antimony	Target	8.3	U	mg/kg	2.6	J*	1	YES	S4VEM
Arsenic	Target	17.3		mg/kg	17.3		1	YES	S4VEM
Barium	Target	188		mg/kg	188		1	YES	S4VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S4VEM
Cadmium	Target	1.6		mg/kg	1.6		1	YES	S4VEM
Calcium	Target	5830		mg/kg	5830		1	YES	S4VEM
Chromium	Target	94.3		mg/kg	94.3		1	YES	S4VEM
Cobalt	Target	13.0		mg/kg	13.0		1	YES	S4VEM
Copper	Target	38.2		mg/kg	38.2		1	YES	S4VEM
Iron	Target	44300		mg/kg	44300		1	YES	S4VEM
Lead	Target	221		mg/kg	221		1	YES	S4VEM
Magnesium	Target	3710		mg/kg	3710		1	YES	S4VEM
Manganese	Target	2340		mg/kg	2340	D	2	YES	S4VEM
Nickel	Target	26.0		mg/kg	26.0		1	YES	S4VEM
Potassium	Target	2590		mg/kg	2590		1	YES	S4VEM
Selenium	Target	4.8	U	mg/kg	4.8	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	0.43	J	1	YES	S4VEM
Sodium	Target	689	U	mg/kg	60.2	J	1	YES	S4VEM
Thallium	Target	3.4	UJ	mg/kg	0.29	J	1	YES	S4VEM
Vanadium	Target	54.4		mg/kg	54.4		1	YES	S4VEM
Zinc	Target	691		mg/kg	691		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC3	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-11	pH:	Sample Date: 02/19/2020	Sample Time: 13:25:00
% Moisture:		% Solids: 76.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC3	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-11	pH:	Sample Date: 02/19/2020	Sample Time: 13:25:00
% Moisture:		% Solids: 76.1	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	13600		mg/kg	13600		1	YES	S4VEM
Antimony	Target	7.7	U	mg/kg	2.1	J*	1	YES	S4VEM
Arsenic	Target	18.4		mg/kg	18.4		1	YES	S4VEM
Barium	Target	138		mg/kg	138		1	YES	S4VEM
Beryllium	Target	0.81		mg/kg	0.81		1	YES	S4VEM
Cadmium	Target	1.1		mg/kg	1.1		1	YES	S4VEM
Calcium	Target	4840		mg/kg	4840		1	YES	S4VEM
Chromium	Target	63.1		mg/kg	63.1		1	YES	S4VEM
Cobalt	Target	10.8		mg/kg	10.8		1	YES	S4VEM
Copper	Target	38.7		mg/kg	38.7		1	YES	S4VEM
Iron	Target	38500		mg/kg	38500		1	YES	S4VEM
Lead	Target	145		mg/kg	145		1	YES	S4VEM
Magnesium	Target	2990		mg/kg	2990		1	YES	S4VEM
Manganese	Target	1420		mg/kg	1420		1	YES	S4VEM
Nickel	Target	22.3		mg/kg	22.3		1	YES	S4VEM
Potassium	Target	1610		mg/kg	1610		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.27	J	1	YES	S4VEM
Sodium	Target	638	U	mg/kg	51.2	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.2	U	1	YES	S4VEM
Vanadium	Target	41.5		mg/kg	41.5		1	YES	S4VEM
Zinc	Target	469		mg/kg	469		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC4	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:30:00
% Moisture:		% Solids: 70.3	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.13	UJ	mg/kg	0.031	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC4	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:30:00
% Moisture:		% Solids: 70.3	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12600		mg/kg	12600		1	YES	S4VEM
Antimony	Target	8.5	U	mg/kg	1.1	J*	1	YES	S4VEM
Arsenic	Target	11.5		mg/kg	11.5		1	YES	S4VEM
Barium	Target	63.6		mg/kg	63.6		1	YES	S4VEM
Beryllium	Target	0.71	U	mg/kg	0.58	J	1	YES	S4VEM
Cadmium	Target	0.71	U	mg/kg	0.059	J	1	YES	S4VEM
Calcium	Target	3300		mg/kg	3300		1	YES	S4VEM
Chromium	Target	30.9		mg/kg	30.9		1	YES	S4VEM
Cobalt	Target	8.6		mg/kg	8.6		1	YES	S4VEM
Copper	Target	21.1		mg/kg	21.1		1	YES	S4VEM
Iron	Target	25400		mg/kg	25400		1	YES	S4VEM
Lead	Target	39.5		mg/kg	39.5		1	YES	S4VEM
Magnesium	Target	2370		mg/kg	2370		1	YES	S4VEM
Manganese	Target	619		mg/kg	619		1	YES	S4VEM
Nickel	Target	17.4		mg/kg	17.4		1	YES	S4VEM
Potassium	Target	1530		mg/kg	1530		1	YES	S4VEM
Selenium	Target	5.0	U	mg/kg	5.0	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	1.4	U	1	YES	S4VEM
Sodium	Target	711	U	mg/kg	61.5	J	1	YES	S4VEM
Thallium	Target	3.6	UJ	mg/kg	3.6	U	1	YES	S4VEM
Vanadium	Target	31.2		mg/kg	31.2		1	YES	S4VEM
Zinc	Target	136		mg/kg	136		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC5	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:40:00
% Moisture:		% Solids: 70.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14	UJ	mg/kg	0.033	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC5	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-12	pH:	Sample Date: 02/19/2020	Sample Time: 13:40:00
% Moisture:		% Solids: 70.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11900		mg/kg	11900		1	YES	S4VEM
Antimony	Target	8.4	U	mg/kg	0.98	J*	1	YES	S4VEM
Arsenic	Target	10.5		mg/kg	10.5		1	YES	S4VEM
Barium	Target	60.1		mg/kg	60.1		1	YES	S4VEM
Beryllium	Target	0.70	U	mg/kg	0.54	J	1	YES	S4VEM
Cadmium	Target	0.70	U	mg/kg	0.11	J	1	YES	S4VEM
Calcium	Target	3420		mg/kg	3420		1	YES	S4VEM
Chromium	Target	29.8		mg/kg	29.8		1	YES	S4VEM
Cobalt	Target	7.9		mg/kg	7.9		1	YES	S4VEM
Copper	Target	20.6		mg/kg	20.6		1	YES	S4VEM
Iron	Target	24000		mg/kg	24000		1	YES	S4VEM
Lead	Target	41.2		mg/kg	41.2		1	YES	S4VEM
Magnesium	Target	2300		mg/kg	2300		1	YES	S4VEM
Manganese	Target	580		mg/kg	580		1	YES	S4VEM
Nickel	Target	16.2		mg/kg	16.2		1	YES	S4VEM
Potassium	Target	1460		mg/kg	1460		1	YES	S4VEM
Selenium	Target	4.9	U	mg/kg	4.9	U	1	YES	S4VEM
Silver	Target	1.4	U	mg/kg	1.4	U	1	YES	S4VEM
Sodium	Target	698	U	mg/kg	60.2	J	1	YES	S4VEM
Thallium	Target	3.5	UJ	mg/kg	3.5	U	1	YES	S4VEM
Vanadium	Target	29.6		mg/kg	29.6		1	YES	S4VEM
Zinc	Target	152		mg/kg	152		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC6	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-13	pH:	Sample Date: 02/19/2020	Sample Time: 14:07:00
% Moisture:		% Solids: 76.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.12	UJ	mg/kg	0.028	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC6	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-13	pH:	Sample Date: 02/19/2020	Sample Time: 14:07:00
% Moisture:		% Solids: 76.8	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	10700		mg/kg	10700		1	YES	S4VEM
Antimony	Target	7.4	U	mg/kg	1.3	J*	1	YES	S4VEM
Arsenic	Target	12.8		mg/kg	12.8		1	YES	S4VEM
Barium	Target	57.0		mg/kg	57.0		1	YES	S4VEM
Beryllium	Target	0.61	U	mg/kg	0.52	J	1	YES	S4VEM
Cadmium	Target	0.61	U	mg/kg	0.14	J	1	YES	S4VEM
Calcium	Target	2900		mg/kg	2900		1	YES	S4VEM
Chromium	Target	37.4		mg/kg	37.4		1	YES	S4VEM
Cobalt	Target	7.5		mg/kg	7.5		1	YES	S4VEM
Copper	Target	21.3		mg/kg	21.3		1	YES	S4VEM
Iron	Target	24600		mg/kg	24600		1	YES	S4VEM
Lead	Target	41.4		mg/kg	41.4		1	YES	S4VEM
Magnesium	Target	2220		mg/kg	2220		1	YES	S4VEM
Manganese	Target	953		mg/kg	953		1	YES	S4VEM
Nickel	Target	15.5		mg/kg	15.5		1	YES	S4VEM
Potassium	Target	1200		mg/kg	1200		1	YES	S4VEM
Selenium	Target	4.3	U	mg/kg	4.3	U	1	YES	S4VEM
Silver	Target	1.2	U	mg/kg	0.14	J	1	YES	S4VEM
Sodium	Target	614	U	mg/kg	32.3	J	1	YES	S4VEM
Thallium	Target	3.1	UJ	mg/kg	3.1	U	1	YES	S4VEM
Vanadium	Target	30.0		mg/kg	30.0		1	YES	S4VEM
Zinc	Target	180		mg/kg	180		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC7	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: P-14	pH:	Sample Date: 02/19/2020	Sample Time: 14:23:00
% Moisture:		% Solids: 76.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.14		mg/kg	0.14		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC7	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: P-14	pH:	Sample Date: 02/19/2020	Sample Time: 14:23:00
% Moisture:		% Solids: 76.0	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	12000		mg/kg	12000		1	YES	S4VEM
Antimony	Target	7.5	U	mg/kg	1.2	J*	1	YES	S4VEM
Arsenic	Target	14.1		mg/kg	14.1		1	YES	S4VEM
Barium	Target	154		mg/kg	154		1	YES	S4VEM
Beryllium	Target	0.95		mg/kg	0.95		1	YES	S4VEM
Cadmium	Target	0.63	U	mg/kg	0.27	J	1	YES	S4VEM
Calcium	Target	8170		mg/kg	8170		1	YES	S4VEM
Chromium	Target	37.5		mg/kg	37.5		1	YES	S4VEM
Cobalt	Target	13.3		mg/kg	13.3		1	YES	S4VEM
Copper	Target	45.3		mg/kg	45.3		1	YES	S4VEM
Iron	Target	34700		mg/kg	34700		1	YES	S4VEM
Lead	Target	30.9		mg/kg	30.9		1	YES	S4VEM
Magnesium	Target	3470		mg/kg	3470		1	YES	S4VEM
Manganese	Target	1160		mg/kg	1160		1	YES	S4VEM
Nickel	Target	28.7		mg/kg	28.7		1	YES	S4VEM
Potassium	Target	2030		mg/kg	2030		1	YES	S4VEM
Selenium	Target	4.4	U	mg/kg	4.4	U	1	YES	S4VEM
Silver	Target	3.0		mg/kg	3.0		1	YES	S4VEM
Sodium	Target	627	U	mg/kg	78.6	J	1	YES	S4VEM
Thallium	Target	3.1	UJ	mg/kg	3.1	U	1	YES	S4VEM
Vanadium	Target	28.7		mg/kg	28.7		1	YES	S4VEM
Zinc	Target	150		mg/kg	150		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC8	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: B-15	pH:	Sample Date: 02/19/2020	Sample Time: 14:45:00
% Moisture:		% Solids: 65.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.15	UJ	mg/kg	0.057	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC8	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: B-15	pH:	Sample Date: 02/19/2020	Sample Time: 14:45:00
% Moisture:		% Solids: 65.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15600		mg/kg	15600		1	YES	S4VEM
Antimony	Target	8.8	U	mg/kg	2.6	J*	1	YES	S4VEM
Arsenic	Target	18.2		mg/kg	18.2		1	YES	S4VEM
Barium	Target	168		mg/kg	168		1	YES	S4VEM
Beryllium	Target	3.0		mg/kg	3.0		1	YES	S4VEM
Cadmium	Target	1.8		mg/kg	1.8		1	YES	S4VEM
Calcium	Target	44500		mg/kg	44500		1	YES	S4VEM
Chromium	Target	71.3		mg/kg	71.3		1	YES	S4VEM
Cobalt	Target	7.4	U	mg/kg	7.1	J	1	YES	S4VEM
Copper	Target	38.6		mg/kg	38.6		1	YES	S4VEM
Iron	Target	63500		mg/kg	63500	D	2	YES	S4VEM
Lead	Target	136		mg/kg	136		1	YES	S4VEM
Magnesium	Target	16000		mg/kg	16000		1	YES	S4VEM
Manganese	Target	1990		mg/kg	1990		1	YES	S4VEM
Nickel	Target	19.4		mg/kg	19.4		1	YES	S4VEM
Potassium	Target	1960		mg/kg	1960		1	YES	S4VEM
Selenium	Target	5.2	U	mg/kg	5.2	U	1	YES	S4VEM
Silver	Target	1.5	U	mg/kg	0.49	J	1	YES	S4VEM
Sodium	Target	737	U	mg/kg	288	J	1	YES	S4VEM
Thallium	Target	3.7	UJ	mg/kg	3.7	U	1	YES	S4VEM
Vanadium	Target	42.9		mg/kg	42.9		1	YES	S4VEM
Zinc	Target	635		mg/kg	635		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC9	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: B-16	pH:	Sample Date: 02/19/2020	Sample Time: 15:10:00
% Moisture:		% Solids: 78.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16		mg/kg	0.16		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AC9	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: B-16	pH:	Sample Date: 02/19/2020	Sample Time: 15:10:00
% Moisture:		% Solids: 78.2	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	17000		mg/kg	17000		1	YES	S4VEM
Antimony	Target	7.7	U	mg/kg	1.7	J*	1	YES	S4VEM
Arsenic	Target	21.3		mg/kg	21.3		1	YES	S4VEM
Barium	Target	269		mg/kg	269		1	YES	S4VEM
Beryllium	Target	2.5		mg/kg	2.5		1	YES	S4VEM
Cadmium	Target	0.64	U	mg/kg	0.52	J	1	YES	S4VEM
Calcium	Target	36200		mg/kg	36200		1	YES	S4VEM
Chromium	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Cobalt	Target	6.8		mg/kg	6.8		1	YES	S4VEM
Copper	Target	25.1		mg/kg	25.1		1	YES	S4VEM
Iron	Target	44700		mg/kg	44700		1	YES	S4VEM
Lead	Target	129		mg/kg	129		1	YES	S4VEM
Magnesium	Target	10700		mg/kg	10700		1	YES	S4VEM
Manganese	Target	5510		mg/kg	5510	D	3	YES	S4VEM
Nickel	Target	21.4		mg/kg	21.4		1	YES	S4VEM
Potassium	Target	1550		mg/kg	1550		1	YES	S4VEM
Selenium	Target	4.5	U	mg/kg	4.5	U	1	YES	S4VEM
Silver	Target	1.3	U	mg/kg	0.37	J	1	YES	S4VEM
Sodium	Target	639	U	mg/kg	282	J	1	YES	S4VEM
Thallium	Target	3.2	UJ	mg/kg	3.0	J	1	YES	S4VEM
Vanadium	Target	47.5		mg/kg	47.5		1	YES	S4VEM
Zinc	Target	575		mg/kg	575		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AD0	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location: B-17	pH:	Sample Date: 02/19/2020	Sample Time: 15:35:00
% Moisture:		% Solids: 60.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.16	UJ	mg/kg	0.11	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AD0	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location: B-17	pH:	Sample Date: 02/19/2020	Sample Time: 15:35:00
% Moisture:		% Solids: 60.9	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	15900		mg/kg	15900		1	YES	S4VEM
Antimony	Target	9.5	U	mg/kg	2.9	J*	1	YES	S4VEM
Arsenic	Target	43.9		mg/kg	43.9		1	YES	S4VEM
Barium	Target	142		mg/kg	142		1	YES	S4VEM
Beryllium	Target	1.9		mg/kg	1.9		1	YES	S4VEM
Cadmium	Target	0.92		mg/kg	0.92		1	YES	S4VEM
Calcium	Target	13600		mg/kg	13600		1	YES	S4VEM
Chromium	Target	76.3		mg/kg	76.3		1	YES	S4VEM
Cobalt	Target	9.0		mg/kg	9.0		1	YES	S4VEM
Copper	Target	64.1		mg/kg	64.1		1	YES	S4VEM
Iron	Target	58500		mg/kg	58500	D	2	YES	S4VEM
Lead	Target	151		mg/kg	151		1	YES	S4VEM
Magnesium	Target	4420		mg/kg	4420		1	YES	S4VEM
Manganese	Target	1870		mg/kg	1870		1	YES	S4VEM
Nickel	Target	21.4		mg/kg	21.4		1	YES	S4VEM
Potassium	Target	1470		mg/kg	1470		1	YES	S4VEM
Selenium	Target	5.5	U	mg/kg	5.5	U	1	YES	S4VEM
Silver	Target	1.6	U	mg/kg	0.53	J	1	YES	S4VEM
Sodium	Target	789	U	mg/kg	149	J	1	YES	S4VEM
Thallium	Target	3.9	UJ	mg/kg	3.9	U	1	YES	S4VEM
Vanadium	Target	58.9		mg/kg	58.9		1	YES	S4VEM
Zinc	Target	447		mg/kg	447		1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Mercury by Cold Vapor	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.10	U	mg/kg	0.10	U	1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR1** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBS01	Method: Metals by ICP-AES	Matrix: Soil	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids: 100	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	11.7	J	mg/kg	11.7	J	1	YES	NV
Antimony	Target	0.27	J	mg/kg	0.27	J	1	YES	NV
Arsenic	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Barium	Target	0.41	J	mg/kg	0.41	J	1	YES	NV
Beryllium	Target	0.50	U	mg/kg	0.50	U	1	YES	NV
Cadmium	Target	0.50	U	mg/kg	0.50	U	1	YES	NV
Calcium	Target	19.2	J	mg/kg	19.2	J	1	YES	NV
Chromium	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Cobalt	Target	5.0	U	mg/kg	5.0	U	1	YES	NV
Copper	Target	0.49	J	mg/kg	0.49	J	1	YES	NV
Iron	Target	5.0	J	mg/kg	5.0	J	1	YES	NV
Lead	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Magnesium	Target	12.1	J	mg/kg	12.1	J	1	YES	NV
Manganese	Target	0.26	J	mg/kg	0.26	J	1	YES	NV
Nickel	Target	4.0	U	mg/kg	4.0	U	1	YES	NV
Potassium	Target	5.0	J	mg/kg	5.0	J	1	YES	NV
Selenium	Target	3.5	U	mg/kg	3.5	U	1	YES	NV
Silver	Target	1.0	U	mg/kg	1.0	U	1	YES	NV
Sodium	Target	5.7	J	mg/kg	5.7	J	1	YES	NV
Thallium	Target	-0.33	J	mg/kg	-0.33	J	1	YES	NV
Vanadium	Target	5.0	U	mg/kg	5.0	U	1	YES	NV
Zinc	Target	6.0	U	mg/kg	6.0	U	1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project	GroupID: 48747/EPW14029/MC8TR1	Lab Name: Bonner Analytical Testing Co.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: 5/5/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill
Region III ESAT RPO (3LS20)

TO: DEBORAH LINDSEY
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for RAS# 48747; SDG# MC8TR2 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc: Joe Carter
Gene Nance

TO: #0002 TDF: #0320060

ICF
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3012

Date: May 1, 2020

To: ESAT Region 3 Project Officer

From: Mahboobeh Mecanic
Validator

Lisa D. Penix
Reviewer

Subject: Inorganic Data Validation (S4VEM)
Weirton BOP Implosion
48747, MC8TR2

Overview

This data package consisted of one (1) rinsate blank analyzed for total metals by ICP-AES and mercury by cold vapor atomic absorption technique

Analysis was performed by Bonner Analytical Testing Company (BON) according to Contract Laboratory Program (CLP) Statement of Work (SOW) ISM02.4.

Data were validated according to the National Functional Guidelines for Inorganic Superfund Methods Data Review and applicable USEPA Region 3 modifications. Electronic validation was performed by the Electronic Data eXchange & Evaluation System (EXES). The validation report has been assigned the Superfund Data Validation Label Stage_3_Validation_Electronic_Manual (S3VEM).

The following validation narrative is an evaluation of laboratory reported data based on the electronic data package available through the EXES Data Manager dated March 13, 2020.

Summary

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. A blank contamination issue resulted in estimated sample result for mercury.

Minor Problem

Laboratory instrumentation reported negative values for mercury (Hg) greater than absolute value of the Method Detection Limit (MDL) in blank analyses. No positive result was reported for Hg. The quantitation limit for Hg in sample MC0AD1 is estimated and qualified “UJ”.

Notes

No analytes below the Contract Required Quantitation Limits (CRQLs) were detected in this sample.

Aluminum (Al), calcium (Ca), copper (Cu), silver (Ag), thallium (Tl) and zinc (Zn) have been detected in laboratory blanks associated with the sample in this SDG. Concentrations of these analytes which were less than the CRQL have been reported at the CRQL and qualified "U".

Sample number MC0AD1 was previously used by the laboratory in their LIMS as an SDG number. Per the Region, the SDG number for this case was changed to MC8TR2.

As this sample is a field quality control sample, matrix spike, laboratory duplicate, and serial dilution analyses were not performed. No data were qualified based on this finding.

Sample calculation checks were performed for all analytes in sample MC0AD1. All calculated results had RPDs less than 5% of the reported results. No sample data were qualified.

Validation qualifiers are only applied by the validator to field samples. Qualifiers may be applied by EXES electronic validation to laboratory quality control samples.

Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR2** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: LCS01	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Spike	417		ug/L	417		1	YES	NV
Antimony	Spike	122		ug/L	122		1	YES	NV
Arsenic	Spike	20.3		ug/L	20.3		1	YES	NV
Barium	Spike	377		ug/L	377		1	YES	NV
Beryllium	Spike	9.9		ug/L	9.9		1	YES	NV
Cadmium	Spike	11.2		ug/L	11.2		1	YES	NV
Calcium	Spike	10200		ug/L	10200		1	YES	NV
Chromium	Spike	22.8		ug/L	22.8		1	YES	NV
Cobalt	Spike	109		ug/L	109		1	YES	NV
Copper	Spike	51.8		ug/L	51.8		1	YES	NV
Iron	Spike	213		ug/L	213		1	YES	NV
Lead	Spike	20.4		ug/L	20.4		1	YES	NV
Magnesium	Spike	10200		ug/L	10200		1	YES	NV
Manganese	Spike	32.4		ug/L	32.4		1	YES	NV
Nickel	Spike	78.6		ug/L	78.6		1	YES	NV
Potassium	Spike	9840		ug/L	9840		1	YES	NV
Selenium	Spike	77.2		ug/L	77.2		1	YES	NV
Silver	Spike	21.9		ug/L	21.9		1	YES	NV
Sodium	Spike	9840		ug/L	9840		1	YES	NV
Thallium	Spike	53.3		ug/L	53.3		1	YES	NV
Vanadium	Spike	110		ug/L	110		1	YES	NV
Zinc	Spike	123		ug/L	123		1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR2** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AD1	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location: Z	pH: 1.	Sample Date: 02/19/2020	Sample Time: 07:30:00
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	UJ	ug/L	0.20	U	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR2** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: MC0AD1	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location: Z	pH: 1.	Sample Date: 02/19/2020	Sample Time: 07:30:00
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	200	U	ug/L	10.5	J	1	YES	S4VEM
Antimony	Target	60.0	U	ug/L	60.0	U	1	YES	S4VEM
Arsenic	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Barium	Target	200	U	ug/L	200	U	1	YES	S4VEM
Beryllium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Cadmium	Target	5.0	U	ug/L	5.0	U	1	YES	S4VEM
Calcium	Target	5000	U	ug/L	38.2	J	1	YES	S4VEM
Chromium	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Cobalt	Target	50.0	U	ug/L	50.0	U	1	YES	S4VEM
Copper	Target	25.0	U	ug/L	1.7	J	1	YES	S4VEM
Iron	Target	100	U	ug/L	100	U	1	YES	S4VEM
Lead	Target	10.0	U	ug/L	10.0	U	1	YES	S4VEM
Magnesium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Manganese	Target	15.0	U	ug/L	15.0	U	1	YES	S4VEM
Nickel	Target	40.0	U	ug/L	40.0	U	1	YES	S4VEM
Potassium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Selenium	Target	35.0	U	ug/L	35.0	U	1	YES	S4VEM
Silver	Target	10.0	U	ug/L	1.7	J	1	YES	S4VEM
Sodium	Target	5000	U	ug/L	5000	U	1	YES	S4VEM
Thallium	Target	25.0	U	ug/L	2.2	J	1	YES	S4VEM
Vanadium	Target	50.0	U	ug/L	50.0	U	1	YES	S4VEM
Zinc	Target	60.0	U	ug/L	0.75	J	1	YES	S4VEM

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR2** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBW01	Method: Mercury by Cold Vapor	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Mercury	Target	0.20	U	ug/L	0.20	U	1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project | **GroupID: 48747/EPW14029/MC8TR2** | **Lab Name: Bonner Analytical Testing Co.**

Sample Number: PBW01	Method: Metals by ICP-AES	Matrix: Water	MA Number:
Sample Location:	pH:	Sample Date:	Sample Time:
% Moisture:		% Solids:	

Analyte Name	Analyte Type	Validation Result	Validation Flag	Units	Lab Result	Lab Flag	Dilution Factor	Reportable	Validation Level
Aluminum	Target	10.9	J	ug/L	10.9	J	1	YES	NV
Antimony	Target	60.0	U	ug/L	60.0	U	1	YES	NV
Arsenic	Target	10.0	U	ug/L	10.0	U	1	YES	NV
Barium	Target	0.67	J	ug/L	0.67	J	1	YES	NV
Beryllium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Cadmium	Target	5.0	U	ug/L	5.0	U	1	YES	NV
Calcium	Target	5000	U	ug/L	5000	U	1	YES	NV
Chromium	Target	0.66	J	ug/L	0.66	J	1	YES	NV
Cobalt	Target	0.31	J	ug/L	0.31	J	1	YES	NV
Copper	Target	2.4	J	ug/L	2.4	J	1	YES	NV
Iron	Target	9.3	J	ug/L	9.3	J	1	YES	NV
Lead	Target	10.0	U	ug/L	10.0	U	1	YES	NV
Magnesium	Target	5000	U	ug/L	5000	U	1	YES	NV
Manganese	Target	0.72	J	ug/L	0.72	J	1	YES	NV
Nickel	Target	40.0	U	ug/L	40.0	U	1	YES	NV
Potassium	Target	5000	U	ug/L	5000	U	1	YES	NV
Selenium	Target	35.0	U	ug/L	35.0	U	1	YES	NV
Silver	Target	1.8	J	ug/L	1.8	J	1	YES	NV
Sodium	Target	5000	U	ug/L	5000	U	1	YES	NV
Thallium	Target	25.0	U	ug/L	25.0	U	1	YES	NV
Vanadium	Target	50.0	U	ug/L	50.0	U	1	YES	NV
Zinc	Target	1.6	J	ug/L	1.6	J	1	YES	NV

Sample Summary Report

Project Name: WEIRTON BOP IMPLOSION SITE Project	GroupID: 48747/EPW14029/MC8TR2	Lab Name: Bonner Analytical Testing Co.

ATTACHMENT 3

FINAL DATA REPORT
HEXAVALENT CHROMIUM

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
Region III Laboratory
701 Mapes Road
Fort Meade, Maryland 20755-5350

Final Analytical Report

Site Name.....	WEIRTON BOP IMPLOSION SITE
Sample Collection Date(s).....	2/19/2020 - 2/19/2020
Contact.....	Debbie Lindsey
Report Date.....	04/15/2020 14:30
Project #.....	DAS R35756
Work Order.....	2002010

Analyses included in this report:

Hexavalent Chromium IC by EPA 218.6 (ESAT)

Percent Dry Weight (105C) by USGS

Approved for Release

Region III Laboratory Representative

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
Region III Laboratory
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Report Narrative

Aqueous Hexavalent Chromium Analysis Note:

This report contains the results for dissolved hexavalent chromium in water by EPA Method 218.6. This report provides reporting units in ug/L.

Solid Hexavalent Chromium Analysis Note:

Soil samples were analyzed following the On-Demand protocols specified in the EPA Region III LSASD Laboratory Quality Manual and section 6.12 of SOP R3QA069-012320. The samples were digested using SW-846 Method 3060A and analyzed by EPA Method 218.6. This report provides reporting units in ug/g. Slight rounding errors will occur in the Electronic Data Deliverable (EDD).

The soluble and insoluble matrix spikes (BB02604-MS1, BB02604-MS2, BB02604-MS3 and BB02604-MS4) of QC source samples 2002010-01 and 2002010-11 yielded recoveries outside the acceptance limit (< 75%); however, the associated post digestion spikes passed. The pH and Oxidation Reduction Potential of samples 2002010-01 and 2002010-11 were measured and the results indicated that the samples could support hexavalent chromium. Samples 2002010-01, 2002010-11 and associated QCs were re-digested and re-analyzed, however matrix spike recoveries were comparable to the initial analysis. Hexavalent chromium was not detected at or above the quantitation limits in samples 2002010-01 and 2002010-11; therefore, the quantitation limits are qualified as estimated (UJ).

The results for QC source sample 2002010-11 and its associated duplicate sample (BB02604-DUP2) are below the quantitation limit (0.57 ug/g) and the RPD is artificially high (49%). Therefore, the RPD value is qualified as having no significance for this QC data (D).

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
Region III Laboratory
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #: DAS R35756**

ANALYTICAL REPORT FOR SAMPLES

Station ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-01	2002010-01	Soil	02/19/2020 9:15	02/21/2020 10:30
SS-02	2002010-02	Soil	02/19/2020 9:37	02/21/2020 10:30
SS-03	2002010-03	Soil	02/19/2020 10:05	02/21/2020 10:30
SS-04	2002010-04	Soil	02/19/2020 10:10	02/21/2020 10:30
SS-05	2002010-05	Soil	02/19/2020 10:20	02/21/2020 10:30
SS-06	2002010-06	Soil	02/19/2020 10:35	02/21/2020 10:30
SS-07	2002010-07	Soil	02/19/2020 10:50	02/21/2020 10:30
SS-08	2002010-08	Soil	02/19/2020 11:15	02/21/2020 10:30
SS-09	2002010-09	Soil	02/19/2020 11:50	02/21/2020 10:30
SS-10	2002010-10	Soil	02/19/2020 11:55	02/21/2020 10:30
SS-11	2002010-11	Soil	02/19/2020 12:20	02/21/2020 10:30
SS-12	2002010-12	Soil	02/19/2020 13:25	02/21/2020 10:30
SS-13	2002010-13	Soil	02/19/2020 13:30	02/21/2020 10:30
SS-14	2002010-14	Soil	02/19/2020 13:40	02/21/2020 10:30
SS-15	2002010-15	Soil	02/19/2020 14:07	02/21/2020 10:30
SS-16	2002010-16	Soil	02/19/2020 14:23	02/21/2020 10:30
SS-17	2002010-17	Soil	02/19/2020 14:45	02/21/2020 10:30
SS-18	2002010-18	Soil	02/19/2020 15:10	02/21/2020 10:30
SS-19	2002010-19	Soil	02/19/2020 15:35	02/21/2020 10:30
RB-01	2002010-20	Water	02/19/2020 7:30	02/21/2020 10:30

USEPA CLP COC (LAB COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818186723

CHAIN OF CUSTODY RECORD

DAS #: R35756
Cooler #: K5

No: 3-022020-125952-0002
Lab: USEPA Region III Environmental Science Center
Lab Contact: Kevin Poff
Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-01	R35756-01	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1052 (6 C) (1)	P-01	02/19/2020 09:15	2002010-01
SS-02	R35756-02	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1055 (6 C) (1)	P-02	02/19/2020 09:37	-02
SS-03	R35756-03	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1058 (6 C) (1)	P-03	02/19/2020 10:05	-03
SS-04	R35756-04	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1061 (6 C) (1)	P-03	02/19/2020 10:10	-04
SS-05	R35756-05	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1064 (6 C) (1)	P-04	02/19/2020 10:20	-05
SS-06	R35756-06	Soil/ Ben Evick	Grab	Cr+6(21)	3-1067 (6 C) (1)	P-05	02/19/2020 10:35	-06
SS-07	R35756-07	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1070 (6 C) (1)	P-06	02/19/2020 10:50	-07
SS-08	R35756-08	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1073 (6 C) (1)	P-07	02/19/2020 11:15	-08
SS-09	R35756-09	Soil/ Ben Evick	Grab	Cr+6(21)	3-1076 (6 C) (1)	P-08	02/19/2020 11:50	-09
SS-10	R35756-10	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1079 (6 C) (1)	P-09	02/19/2020 11:55	-10
SS-11	R35756-11	Soil/ Ben Evick	Grab	Cr+6(21)	3-1082 (6 C) (1)	P-10	02/19/2020 12:20	-11
SS-12	R35756-12	Soil/ Ben Evick	Grab	Cr+6(21)	3-1085 (6 C) (1)	P-11	02/19/2020 13:25	-12

Sample(s) to be used for Lab QC: SS-01 Tag 3-1052 - Special Instructions: Please return cooler with FedEx return label inside

Samplers: Ben Eick Matthew

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Cr+6=Hexavalent Chromium

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Ben Eick TechLaw	2/20/20 1700	Matt Cooke ESAT	2/21/20 10:30	4.8°C MC 2/21/20

USEPA CLP COC (LAB COPY)

DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777818186723

CHAIN OF CUSTODY RECORD

DAS #: R35756
Cooler #: K5

No: 3-022020-125952-0002

Lab: USEPA Region III Environmental Science Center
Lab Contact: Kevin Poff
Lab Phone: 410-305-2938

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-13	R35756-13	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1088 (6 C) (1)	P-12	02/19/2020 13:30	2002010-13
SS-14	R35756-14	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1091 (6 C) (1)	P-12	02/19/2020 13:40	-14
SS-15	R35756-15	Soil/ Ben Evick	Grab	Cr+6(21)	3-1094 (6 C) (1)	P-13	02/19/2020 14:07	-15
SS-16	R35756-16	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1097 (6 C) (1)	P-14	02/19/2020 14:23	-16
SS-17	R35756-17	Soil/ Ben Evick	Grab	Cr+6(21)	3-1100 (6 C) (1)	B-15	02/19/2020 14:45	-17
SS-18	R35756-18	Soil/ Matthew Ridgway	Grab	Cr+6(21)	3-1103 (6 C) (1)	B-16	02/19/2020 15:10	-18
SS-19	R35756-19	Soil/ Ben Evick	Grab	Cr+6(21)	3-1106 (6 C) (1)	B-17	02/19/2020 15:35	-19
RB-01	R35756-R1	Water/ Matthew Ridgway	Grab	Cr+6(21)	3-1108 (NH4OH/(NH4)2SO4 pH 9.5) (1)	Z	02/19/2020 07:30	-20

Special Instructions: Please return cooler with FedEx return label inside

Samplers: Ben Evick Matthew Ridgway

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Cr+6=Hexavalent Chromium

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Ben Evick TechLaw	2/20/20 1700	Matt Cooke ESAT	2/21/20 10:30	4.8 °C MC 2/21/20

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701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-01								
Station ID: SS-01								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**65.2**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-02								
Station ID: SS-02								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**78.3**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-03								
Station ID: SS-03								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**80.3**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-04								
Station ID: SS-04								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**75.4**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-05								
Station ID: SS-05								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**68.5**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-06								
Station ID: SS-06								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**68.7**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-07								
Station ID: SS-07								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**61.2**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-08								
Station ID: SS-08								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**68.0**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-09								
Station ID: SS-09								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**48.4**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-10								
Station ID: SS-10								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**73.2**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-11								
Station ID: SS-11								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**69.6**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-12								
Station ID: SS-12								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**75.1**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-13								
Station ID: SS-13								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**70.5**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-14								
Station ID: SS-14								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**70.1**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-15								
Station ID: SS-15								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**76.9**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-16								
Station ID: SS-16								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**75.4**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-17								
Station ID: SS-17								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**66.2**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-18								
Station ID: SS-18								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**79.4**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

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Physical Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-19								
Station ID: SS-19								
Sample Matrix: Soil								
Collected: 02/19/2020								
% Solids	**59.9**			% by Weight	1	02/26/2020 12:26	02/28/2020 12:40	USGS I-5753-85/R3QA056

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-01								
Station ID: SS-01								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U	UJ	0.61	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:33	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-02								
Station ID: SS-02								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.51	ug/g dry	1	02/27/2020 15:25	03/03/2020 13:56	EPA 218.6/R3QA161

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-03								
Station ID: SS-03								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.50	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:03	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-04								
Station ID: SS-04								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:10	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-05								
Station ID: SS-05								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.58	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:17	EPA 218.6/R3QA161

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Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-06								
Station ID: SS-06								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.58	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:24	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-07								
Station ID: SS-07								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.65	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:46	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-08								
Station ID: SS-08								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.59	ug/g dry	1	02/27/2020 15:25	03/03/2020 14:53	EPA 218.6/R3QA161

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-09								
Station ID: SS-09								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.82	ug/g dry	1	02/27/2020 15:25	03/03/2020 15:00	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-10								
Station ID: SS-10								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.55	ug/g dry	1	02/27/2020 15:25	03/03/2020 15:07	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-11								
Station ID: SS-11								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U	UJ	0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 18:09	EPA 218.6/R3QA161

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-12								
Station ID: SS-12								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:04	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-13								
Station ID: SS-13								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:11	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-14								
Station ID: SS-14								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.57	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:37	EPA 218.6/R3QA161

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Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-15								
Station ID: SS-15								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.52	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:43	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-16								
Station ID: SS-16								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.53	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:50	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-17								
Station ID: SS-17								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.60	ug/g dry	1	02/27/2020 15:25	03/03/2020 16:57	EPA 218.6/R3QA161

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #:** **DAS R35756**

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-18								
Station ID: SS-18								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.50	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:05	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-19								
Station ID: SS-19								
Sample Matrix: Soil								
Collected: 02/19/2020								
Hexavalent Chromium	U		0.67	ug/g dry	1	02/27/2020 15:25	03/03/2020 17:12	EPA 218.6/R3QA161

Classical Chemistry Parameters

Analyte	Result	Flags/ Qualifiers	Quantitation Limit	Units	Dilution	Prepared	Analyzed	Method/SOP#
Lab ID: 2002010-20								
Station ID: RB-01								
Sample Matrix: Water								
Collected: 02/19/2020								
Hexavalent Chromium	U		1.00	ug/L	1	02/26/2020 10:00	02/26/2020 12:40	EPA 218.6/R3QA161

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #: DAS R35756**

QC Data
Physical Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BB02603 - PD60/PD105 ESAT										
Duplicate (BB02603-DUP1)		**Source: 2002010-01**		Prepared: 02/26/2020 12:26			Analyzed: 02/28/2020 12:40			
% Solids	67.3		% by Weight		65.2			3	20	
Duplicate (BB02603-DUP2)		**Source: 2002010-11**		Prepared: 02/26/2020 12:26			Analyzed: 02/28/2020 12:40			
% Solids	68.2		% by Weight		69.6			2	20	

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Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #: DAS R35756**

QC Data
Classical Chemistry Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BB02602 - Hex Chrom Prep ESAT										
Blank (BB02602-BLK1)				Prepared: 02/26/2020 10:00			Analyzed: 02/26/2020 12:19			
Hexavalent Chromium	U	1.00	ug/L							
LCS (BB02602-BS1)				Prepared: 02/26/2020 10:00			Analyzed: 02/26/2020 12:33			
Hexavalent Chromium	39.7	1.00	ug/L	40.000		99	90-110			
Duplicate (BB02602-DUP1)		**Source: 2002010-20**		Prepared: 02/26/2020 10:00			Analyzed: 02/26/2020 12:48			
Hexavalent Chromium	U	1.00	ug/L		U				20	
Matrix Spike (BB02602-MS1)		**Source: 2002010-20**		Prepared: 02/26/2020 10:00			Analyzed: 02/26/2020 12:55			
Hexavalent Chromium	40.4	1.00	ug/L	40.000	U	101	90-110			
Batch BB02604 - Hex Chrom Prep ESAT										
Blank (BB02604-BLK1)				Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 12:22			
Hexavalent Chromium	U	0.40	ug/g wet							
LCS (BB02604-BS1)				Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 12:36			
Hexavalent Chromium	3.82	0.40	ug/g wet	4.0000		95	90-110			
Duplicate (BB02604-DUP1)		**Source: 2002010-01**		Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 17:40			
Hexavalent Chromium	0.105	0.61	ug/g dry		0.125			17	20	
Duplicate (BB02604-DUP2)		**Source: 2002010-11**		Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 18:16			
Hexavalent Chromium	0.120	0.57	ug/g dry		0.198			49	20	D
Matrix Spike (BB02604-MS1)		**Source: 2002010-01**		Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 17:47			
Hexavalent Chromium	0.132	0.61	ug/g dry	6.1186	0.125	0.1	75-125			A

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
Region III Laboratory
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #: DAS R35756**

QC Data
Classical Chemistry Parameters

Analyte	Result	Quantitation Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch BB02604 - Hex Chrom Prep ESAT										
Matrix Spike (BB02604-MS2)	**Source: 2002010-01**			Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 17:54			
Hexavalent Chromium	380	12.3	ug/g dry	1193.1	0.125	32	75-125			A
Matrix Spike (BB02604-MS3)	**Source: 2002010-11**			Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 18:23			
Hexavalent Chromium	0.180	0.57	ug/g dry	5.7368	0.198	NR	75-125			A
Matrix Spike (BB02604-MS4)	**Source: 2002010-11**			Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 18:30			
Hexavalent Chromium	1040	57.4	ug/g dry	1450.7	0.198	72	75-125			A
Post Spike (BB02604-PS1)	**Source: 2002010-01**			Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 18:01			
Hexavalent Chromium	103		ug/L	100.00	2.05	101	85-115			
Post Spike (BB02604-PS2)	**Source: 2002010-11**			Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 18:37			
Hexavalent Chromium	105		ug/L	100.00	3.44	101	85-115			
Reference (BB02604-SRM1)				Prepared: 02/27/2020 15:25			Analyzed: 03/03/2020 12:43			
Hexavalent Chromium	113	7.98	ug/g wet	126.00		89	65-135			

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Environmental Science Center
Region III Laboratory
701 Mapes Road
Fort Meade, Maryland 20755-5350

Site Name: **WEIRTON BOP IMPLOSION SITE** **Project #: DAS R35756**

Notes and Definitions

UJ	The analyte was not detected at or above the quantitation limit. The quantitation limit is an estimate.
D	Source sample result and/or duplicate sample result are below the quantitation limit and the RPD is artificially high. Precision data (RPD value) has no significance for this QC Sample.
A	Quality control value is outside acceptance limits.
%REC	Percent Recovery
RPD	Relative Percent Difference
U	Analyte included in the analysis, but not detected at or above the quantitation limit.
NR	Not Reported

QUANTITATION LIMIT: The lowest concentration of an analyte that can be reliably measured within specified limits of precision and accuracy for a specific laboratory analytical method and that takes into account analytical adjustments made during sample preparation and analysis.

SOLID SAMPLE RESULTS - REPORTING PROTOCOL: Percent Solids (percent dry wt at 105 degrees C) determinations are routinely performed for most organic and inorganic analyses. Consequently, these samples are analyzed wet and converted to a dry weight result for reporting purposes. If metals and mercury analyses are requested, they are routinely prepared for analyses by an initial drying at 60 degrees C, homogenized prior to digestion, and are analyzed and reported on a dry weight basis. Oil-type samples are analyzed and reported on a wet weight basis for all analyses because of the nature of the sample matrix. Any exceptions to this protocol will be noted in the narrative.

ON-DEMAND: The term 'on-demand' analysis, if noted in the report narrative, refers to Section 13.1.4 in the Region III OASQA Laboratory Quality Manual, which provides procedures for non-routine analyses or analytes.

ATTACHMENT 4

DATA VALIDATION REPORT
ASBESTOS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION III
Environmental Sciences Center
701 Mapes Road
Fort Meade, Maryland 20755-5350

DATE: 6/2/2020

SUBJECT: Region III Data QA Review

FROM: Eric Graybill
Region III ESAT RPO (3LS20)

TO: DEBORAH LINDSEY
Hazardous Site Cleanup Division (HSCD)

Attached is the data validation report for the WEIRTON BOP IMPLOSION SITE site for DAS# R35754; SDG# EMSL04 completed by the Region III Environmental Services Assistance Team (ESAT) contractor, ICF International, under the direction of Region III LSASD.

If you have any questions regarding this review, please call Eric Graybill at (410)-305-2665.

Attachment

cc: Joe Carter
304-830-1442

TO: #0002 TDF: #0520008

ICF
ESAT Region 3
US Environmental Protection Agency Environmental Science Center
701 Mapes Road Ft. Meade, MD 20755-5350
Phone 410-305-3012

Date: May 19, 2020

To: ESAT Region 3 Project Officer

From: Lisa D. Penix
Validator

Dean Gouveia
Reviewer

Subject: Inorganic Data Validation (S4VM)
Weirton BOP Implosion
R35754 EMSL04

Overview

This data package consisted of nineteen (19) soil samples, including two (2) field duplicate pairs, analyzed for asbestos utilizing polarized light microscopy (PLM).

Analyses were performed by EMSL Analytical, Inc. (EMSL). The samples were submitted to the laboratory directly by the sampling contractor. The laboratory indicated analyses were performed according to Test Method for the Determination of Asbestos in Bulk Building Materials, EPA/600/R-93/116 July 1993, with milling prep.

Data were validated according to the USEPA PLM Validation Process Guidelines for Asbestos Data Review and with guidance from the National Functional Guidelines for Inorganic Superfund Methods Data Review and are assigned the Superfund Data Validation Label S4VM (Stage_4_Validation_Manual).

The following validation narrative is an evaluation of laboratory reported data based on the electronic data package received by Region 3 on May 7, 2020.

An Electronic Data Deliverable (EDD) was provided by the laboratory. It was protected and could not be modified by the validator. No EDD is provided with this data validation report.

Summary

No data quality outliers or technical deficiencies were identified that would require rejection of sample results. Missing Refractive Index (RI) Liquid Calibration required estimation of sample results.

Minor Problem

The RI Liquid Calibration was not included in the data package. Visual Estimation and Point Count Limits of Quantification (LOQs) are estimated and have been qualified "UJ".

Notes

Mill preparation can reduce fiber size. While allowable to homogenize samples under the method, care must be taken to discontinue as soon as the material appears homogenous. This cannot be evaluated through the data package. No data were qualified based on this finding.

Asbestos fibers classified as chrysotile by the laboratory were detected in trace amounts in visual estimation of sample SS-12. The result for this sample was below the LOQ in point counting.

Data for field duplicate pairs SS-03/SS-04 and SS-13/SS-14 were comparable. No asbestos fibers were detected in either analysis.

For the laboratory duplicate analysis performed on sample SS-12, results were comparable (both results were below the LOQ in point counting). For the laboratory duplicate analyses performed on samples SS-01 and SS-07, no asbestos fibers were detected in any sample pair. No data were qualified based on laboratory precision.

Laboratory blanks associated with the samples in this SDG were free of asbestos.

Microscope alignment verification is present and shows proper alignment.

Reference sample analysis and fiber identification criteria for the visual examination trace results were reviewed by the validator and found to be accurate and consistent.

Glossary of Inorganic Data Qualifier Codes

Validation Qualifiers	In order of descending precedence. Only one of these qualifiers may apply to any result.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit
B	The result is presumed a blank contaminant. This qualifier is used for drinking water samples only.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM

Lab Name:	EMSL04	Analyzed by:	A. Burke
Lab Job No:	042004637	Analysis date:	3/5/2020
Data Entry by:	M. Smollock	QA by:	B. Beatty
Data Entry Date:	3/9/2020	QA Date:	3/10/2020

Client Sample Number	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Mineral Type (b)	OPTICAL PROPERTIES								Comments
						Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index α (parallel)	Ref. Index γ (perpendicular)	Biref.	
SS-01			Not QA	042004637-0001										AB 3/5/2020
SS-02			Not QA	042004637-0002										AB 3/5/2020
SS-03			Not QA	042004637-0003										AB 3/5/2020
SS-04			Not QA	042004637-0004										AB 3/5/2020
SS-05			Not QA	042004637-0005										AB 3/5/2020
SS-06			Not QA	042004637-0006										AB 3/5/2020
SS-07			Not QA	042004637-0007										AB 3/5/2020
SS-08			Not QA	042004637-0008										AB 3/5/2020
SS-09			Not QA	042004637-0009										AB 3/5/2020
SS-10			Not QA	042004637-0010										OA 3/5/2020
SS-11			Not QA	042004637-0011										OA 3/5/2020
SS-12			Not QA	042004637-0012	CH	W	C	+	N	P	1.551	1.557	L	OA 3/5/2020
SS-13			Not QA	042004637-0013										OA 3/5/2020
SS-14			Not QA	042004637-0014										OA 3/5/2020
SS-15			Not QA	042004637-0015										OA 3/5/2020
SS-16			Not QA	042004637-0016										OA 3/5/2020
SS-17			Not QA	042004637-0017										OA 3/5/2020
SS-18			Not QA	042004637-0018										OA 3/5/2020
SS-19			Not QA	042004637-0019										OA 3/5/2020
SS-01			LD	042004637-0001A										JP 3/5/2020 - Inter-analyst C
SS-07			LD	042004637-0007A										AB 3/5/2020 - Intra-analyst C
SS-12			LD	042004637-0019	CH	W	C	+	N	P	1.551	1.554	L	AG 3/5/2020 - Inter-analyst C

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Visual Estimation
ANALYTICAL REPORT
FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION				ANALYSIS INFORMATION				ABBREVIATED NOTES		
Site/Project Name:	R35754	**Lab Name:**	EMSL04	**Method:**	**Analysis By:**	A. Burke	**Data Entry Date** 3/9/2020	(a) Valid QA Types:	(b) Valid Mineral Types: **AC** - actinolite **AM** - amosite **AN** - anthophyllite **CH** - chrysotile	(c) OM Description Standard Selections:
State/Federal Site/Project Identifier:	R35754	**Lab Job Number:**	042004637		**Analysis Date:**	3/5/2020	**QA by** B. Beatty	**Not QA** - Not a QA sample	**CR** - crocidolite **TR** - tremolite **WRTA** - winchite/richterite/tremolite/actinolite **OA** - other amphibole	*Taconite*
Site/Project Identifier Code:	R35754	**Date Received by lab:**	02/21/20	EPA 600_VE	**Data Entry by**	M. Smollock	**QA Date** 3/10/2020	**LD** - Lab Duplicate	**NAM** - non-asbestis material **OM** - other mineral type (specify in "other mineral description" field)	*Erionite*

Enter percentage as a value, not a fraction (Example: Enter 50% as 50, not 0.50).

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Sample Appearance	Ref Material	Base Mineral Type of Reference Material (b)	Actinolite (AC)			Amosite (AM)			Anthophyllite (AN)			Chrysotile (CH)			Crocidolite (CR)			Tremolite (TR)			winchite/richterite/ tremolite/actinolite (WRTA)			Other Amphibole (OA)			Non-asbestos Material (NAM)			Other Mineral Type (OM)				Deviation?	Comments
									Qual	AC-AF (%)	AC-MF (%)	Qual	AM-AF (%)	AM-MF (%)	Qual	AN-AF (%)	AN-MF (%)	Qual	CH-AF (%)	CH-MF (%)	Qual	CR-AF (%)	CR-MF (%)	Qual	TR-AF (%)	TR-MF (%)	Qual	WRTA-AF (%)	WRTA-MF (%)	Qual	OA-AF (%)	OA-MF (%)	Qual	NAM-AF (%)	NAM-MF (%)	Qual	OM-AF (%)	OM-MF (%)	OM Type (c)		
SS-01	Soil			Not QA	042004637-0001	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-02	Soil			Not QA	042004637-0002	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-03	Soil			Not QA	042004637-0003	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-04	Soil			Not QA	042004637-0004	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-05	Soil			Not QA	042004637-0005	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-06	Soil			Not QA	042004637-0006	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-07	Soil			Not QA	042004637-0007	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-08	Soil			Not QA	042004637-0008	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-09	Soil			Not QA	042004637-0009	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-10	Soil			Not QA	042004637-0010	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-11	Soil			Not QA	042004637-0011	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-12	Soil			Not QA	042004637-0012	Brown-Non-Fil	Tremolite	TR	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - OA 3/5/2020
SS-13	Soil			Not QA	042004637-0013	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-14	Soil			Not QA	042004637-0014	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-15	Soil			Not QA	042004637-0015	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-16	Soil			Not QA	042004637-0016	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-17	Soil			Not QA	042004637-0017	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-18	Soil			Not QA	042004637-0018	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-19	Soil			Not QA	042004637-0019	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-01	Soil			LD	042004637-0001	Brown-Non-Fil	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil			LD	042004637-0007	Brown-Non-Fil	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil			LD	042004637-0012	Brown-Non-Fil	Actinolite	AC	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

Site or Project Name:	R35754
State/Federal Site or Project Identifier:	R35754
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job No:	042004637
Date received by lab:	02/21/20
Analyzed by:	A. Burke
Analysis Date:	3/5/2020

Point Count Method: EPA 600_PC

Data Entry by:	M. Smollock
Data Entry Date:	3/9/2020
QA by:	B. Beatty
QA Date:	3/10/2020

ABBREVIATED NOTES:

(a) Valid QA Types:

Not QA	Not a QA sample
LD	Lab Duplicate

(b) Valid Mineral Types:

AC	actinolite	WRTA	winchite/richterite/tremolite/actinolite
AM	amosite	OA	other amphibole
AN	anthophyllite	NAM	non-asbestos material
CH	chrysotile	OM	other mineral type
CR	crocidolite		(c)*OM Description Standard Selections:*
TR	tremolite		*Taconite*
			Erionite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)											Validation Qualifier	Comments
							AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (c)		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	<0.25% CH - OA 3/5/2020
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	OA 3/5/2020
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		UJ	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

ANALYTICAL REPORT

FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION		ANALYSIS INFORMATION			ABBREVIATED NOTES	
Site/Project Name:	R35754	**Method:**	**Analysis By:**	A. Burke	(a) Valid QA Types:	(b) Valid Mineral Types:
State/Federal Site/Project Identifier:	R35754	EPA 600_PC	**Analysis Date:**	3/5/2020	**Not QA** - Not a QA sample	**AC** - actinolite **AM** - amosite **AN** - anthophyllite
Site/Project Identifier Code:	R35754		**Data Entry by:**	M. Smollock	**LD** - Lab Duplicate	**CH** - chrysotile **CR** - crocidolite **TR** - tremolite
Lab Name:	EMSL04		**Data Entry Date:**	3/9/2020	(c) OM Description Standard Selections:	**WRTA** - winchite/richterite/tremolite/actinolite
Lab Job Number:	042004637		**QA by:**	B. Beatty		**OA** - other amphibole NAM - non-asbestis material
Date Received by lab:	02/21/20		**QA Date:**	3/10/2020	*Taconite* *Erionite*	**OM** - other mineral type (specify in "other mineral description" field)

							Grav. Reduction		Concentration (%) for each mineral type (b)												
Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (b)	**Total (%)**
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000												0.0
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000												0.0
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000												0.0
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000												0.0
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000												0.0
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000												0.0
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000												0.0
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000												0.0
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000												0.0
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000												0.0
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000												0.0
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000												0.0
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000												0.0
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000												0.0
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000												0.0
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000												0.0
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000												0.0
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000												0.0

EMSL ANALYTICAL, INC.

EMSL Analytical, Inc.

Asbestos Data Package

EMSL Order ID: 042004637

Techlaw, Inc.
DAS #R35754

Prepared By: EMSL Special Projects Group

Date: March 10, 2020

EMSL ANALYTICAL, INC.

TABLE OF CONTENTS

EMSL ANALYTICAL, INC.

1. Case Narrative

EMSL ANALYTICAL, INC.
200 ROUTE 130 NORTH
CINNAMINSON, NJ 08077
PHONE: (800) 220-3675
FAX: (856) 858-4960

March 10, 2020

Gene Nance
Techlaw, Inc.
139 Peninsula Street
Wheeling, WV 26003
(304)230-1230
Gene.Nance@TechLawInc.com

Re: **Narrative: PLM EPA/600/R-93/116 with Milling Prep; EMSL Order: 042004637, Case #R35754**

Dear Gene:

On February 21, 2020, EMSL Analytical, Inc. in Cinnaminson, NJ received nineteen (19) soil samples for asbestos content analysis via PLM EPA/600/R-93/116 with milling. All samples were received via FedEx under Chain of Custody #3-022020-124148-0001 from Techlaw, Inc. The samples were received in good condition and were logged in following normal lab procedures.

PLM EPA/600/R-93/116 with Milling Prep

The samples were dried prior to being placed in the puck mill. The milled samples were analyzed via Polarized Light Microscopy (PLM) using the procedures from the PLM EPA 600/R-93/116 method. All data was reported on a percent asbestos basis. Per the EMSL SOP method, any sample having asbestos content (visual estimation) ranging from <1 to 10% was subject to a 400 point count. The limit of quantification for this method is <0.25

QC Performed

Two inter-analyst and one intra-analyst QC analyses were completed with acceptable results. Quality Control for this project was performed in compliance with EMSL's Quality Assurance Manual.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. In addition, I certify, that to the best of my knowledge and belief, the data as reported are true and accurate. Release of the data contained in this data package has been authorized by the Laboratory Manager or their designee, as verified by the following signature.

3/10/20
Date

Benjamin Ellis
Senior Scientist – Special Projects
EMSL Cinnaminson, NJ

EMSL ANALYTICAL, INC.

2. Tabulated Sample Results

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 042004637
Customer ID: TCHL75
Customer PO:
Project ID:

Attention: Gene Nance
TechLaw Inc.
139 Peninsula St.
Wheeling, WV 26003

Project: DAS #R35754

Phone: (304) 230-1230
Fax:
Received: 02/21/2020 10:40 AM
Analysis Date: 03/05/2020
Collected: 02/19/2020

Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method using PLM and Milling Prep. Quantitation using 400 Point Count Procedure

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
SS-01 *042004637-0001*	P-01 - R35754-01 / 3-1050	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-02 *042004637-0002*	P-02 - R35754-02 / 3-1054	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-03 *042004637-0003*	P-03 - R35754-03 / 3-1057	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-04 *042004637-0004*	P-03 - R35754-04 / 3-1060	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-05 *042004637-0005*	P-04 - R35754-05 / 3-1063	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-06 *042004637-0006*	P-05 - R35754-06 / 3-1066	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-07 *042004637-0007*	P-06 - R35754-07 / 3-1069	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-08 *042004637-0008*	P-07 - R35754-08 / 3-1072	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-09 *042004637-0009*	P-08 - R35754-09 / 3-1075	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-10 *042004637-0010*	P-09 - R35754-10 / 3-1078	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**

Initial report from: 03/06/2020 09:29:15

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
http://www.EMSL.com / cinnasblab@EMSL.com

EMSL Order: 042004637
Customer ID: TCHL75
Customer PO:
Project ID:

Attention: Gene Nance
TechLaw Inc.
139 Peninsula St.
Wheeling, WV 26003

Project: DAS #R35754

Phone: (304) 230-1230
Fax:
Received: 02/21/2020 10:40 AM
Analysis Date: 03/05/2020
Collected: 02/19/2020

Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method using PLM and Milling Prep. Quantitation using 400 Point Count Procedure

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
SS-11 *042004637-0011*	P-10 - R35754-11 / 3-1081	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-12 *042004637-0012*	P-11 - R35754-12 / 3-1084	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**<0.25% Chrysotile**
SS-13 *042004637-0013*	P-12 - R35754-13 / 3-1087	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-14 *042004637-0014*	P-12 - R35754-14 / 3-1090	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-15 *042004637-0015*	P-13 - R35754-15 / 3-1093	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-16 *042004637-0016*	P-14 - R35754-16 / 3-1096	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-17 *042004637-0017*	B-15 - R35754-17 / 3-1099	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-18 *042004637-0018*	B-16 - R35754-18 / 3-1102	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**
SS-19 *042004637-0019*	B-17 - R35754-19 / 3-1105	Brown Non-Fibrous Homogeneous		100.0% Non-fibrous (Other)	**None Detected**

Initial report from: 03/06/2020 09:29:15

EMSL Analytical, Inc.
200 Route 130 North Cinnaminson, NJ 08077
Phone/Fax: (800) 220-3675 / (856) 786-5974
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EMSL Order: 042004637
Customer ID: TCHL75
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Attention: Gene Nance
TechLaw Inc.
139 Peninsula St.
Wheeling, WV 26003

Project: DAS #R35754

Phone: (304) 230-1230
Fax:
Received: 02/21/2020 10:40 AM
Analysis Date: 03/05/2020
Collected: 02/19/2020

Test Report: Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/116 Method using PLM and Milling Prep. Quantitation using 400 Point Count Procedure

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**

Analyst(s)

Andrew Burke (11)
Olufunke Akintunde (8)

Samantha Rundstrom, Laboratory Manager
or other approved signatory

Initial report from: 03/06/2020 09:29:15

FILENAME:	R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM

Site/Project Identifier Code:	R35754	Media:	soil
Site or Project Name:	R35754	Date received by lab:	2/21/2020
State/Federal Site or Project Identifier:	R35754	Chain of Custody Number:	3-022020-124148-0001
Laboratory Name:	EMSL04	Analyzed by:	A. Burke
Lab Job Number:	042004637	Analysis date:	3/5/2020

COMMENTS (do not use commas)

Also analyzed by O. Akintunde; J. Patel; and A. Gart on 3/5/2020.

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM

Lab Name:	EMSL04	Analyzed by:	A. Burke
Lab Job No:	042004637	Analysis date:	3/5/2020
Data Entry by:	M. Smollock	QA by:	B. Beatty
Data Entry Date:	3/9/2020	QA Date:	3/10/2020

Client Sample Number	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Mineral Type (b)	OPTICAL PROPERTIES								Comments
						Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index α (parallel)	Ref. Index γ (perpendicular)	Biref.	
SS-01			Not QA	042004637-0001										AB 3/5/2020
SS-02			Not QA	042004637-0002										AB 3/5/2020
SS-03			Not QA	042004637-0003										AB 3/5/2020
SS-04			Not QA	042004637-0004										AB 3/5/2020
SS-05			Not QA	042004637-0005										AB 3/5/2020
SS-06			Not QA	042004637-0006										AB 3/5/2020
SS-07			Not QA	042004637-0007										AB 3/5/2020
SS-08			Not QA	042004637-0008										AB 3/5/2020
SS-09			Not QA	042004637-0009										AB 3/5/2020
SS-10			Not QA	042004637-0010										OA 3/5/2020
SS-11			Not QA	042004637-0011										OA 3/5/2020
SS-12			Not QA	042004637-0012	CH	W	C	+	N	P	1.551	1.557	L	OA 3/5/2020
SS-13			Not QA	042004637-0013										OA 3/5/2020
SS-14			Not QA	042004637-0014										OA 3/5/2020
SS-15			Not QA	042004637-0015										OA 3/5/2020
SS-16			Not QA	042004637-0016										OA 3/5/2020
SS-17			Not QA	042004637-0017										OA 3/5/2020
SS-18			Not QA	042004637-0018										OA 3/5/2020
SS-19			Not QA	042004637-0019										OA 3/5/2020
SS-01			LD	042004637-0001A										JP 3/5/2020 - Inter-analyst C
SS-07			LD	042004637-0007A										AB 3/5/2020 - Intra-analyst C
SS-12			LD	042004637-0019	CH	W	C	+	N	P	1.551	1.554	L	AG 3/5/2020 - Inter-analyst C

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm
National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Visual Estimation
ANALYTICAL REPORT
FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION				ANALYSIS INFORMATION				ABBREVIATED NOTES		
Site/Project Name:	R35754	**Lab Name:**	EMSL04	**Method:**	**Analysis By:**	A. Burke	**Data Entry Date** 3/9/2020	(a) Valid QA Types:	(b) Valid Mineral Types: **AC** - actinolite **AM** - amosite **AN** - anthophyllite **CH** - chrysotile	(c) OM Description Standard Selections:
State/Federal Site/Project Identifier:	R35754	**Lab Job Number:**	042004637		**Analysis Date:**	3/5/2020	**QA by** B. Beatty	**Not QA** - Not a QA sample	**CR** - crocidolite **TR** - tremolite **WRTA** - winchite/richterite/tremolite/actinolite **OA** - other amphibole	*Taconite*
Site/Project Identifier Code:	R35754	**Date Received by lab:**	02/21/20	EPA 600_VE	**Data Entry by**	M. Smollock	**QA Date** 3/10/2020	**LD** - Lab Duplicate	**NAM** - non-asbestis material **OM** - other mineral type (specify in "other mineral description" field)	*Erionite*

Enter percentage as a value, not a fraction (Example: Enter 50% as 50, not 0.50).

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (a)	Lab Sample Number	Sample Appearance	Ref Material	Base Mineral Type of Reference Material (b)	Actinolite (AC)			Amosite (AM)			Anthophyllite (AN)			Chrysotile (CH)			Crocidolite (CR)			Tremolite (TR)			winchite/richterite/ tremolite/actinolite (WRTA)			Other Amphibole (OA)			Non-asbestos Material (NAM)			Other Mineral Type (OM)				Deviation?	Comments
									Qual	AC-AF (%)	AC-MF (%)	Qual	AM-AF (%)	AM-MF (%)	Qual	AN-AF (%)	AN-MF (%)	Qual	CH-AF (%)	CH-MF (%)	Qual	CR-AF (%)	CR-MF (%)	Qual	TR-AF (%)	TR-MF (%)	Qual	WRTA-AF (%)	WRTA-MF (%)	Qual	OA-AF (%)	OA-MF (%)	Qual	NAM-AF (%)	NAM-MF (%)	Qual	OM-AF (%)	OM-MF (%)	OM Type (c)		
SS-01	Soil			Not QA	042004637-0001	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-02	Soil			Not QA	042004637-0002	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-03	Soil			Not QA	042004637-0003	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-04	Soil			Not QA	042004637-0004	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-05	Soil			Not QA	042004637-0005	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-06	Soil			Not QA	042004637-0006	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-07	Soil			Not QA	042004637-0007	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-08	Soil			Not QA	042004637-0008	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-09	Soil			Not QA	042004637-0009	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020
SS-10	Soil			Not QA	042004637-0010	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-11	Soil			Not QA	042004637-0011	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-12	Soil			Not QA	042004637-0012	Brown-Non-Fib	Tremolite	TR	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - OA 3/5/2020
SS-13	Soil			Not QA	042004637-0013	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-14	Soil			Not QA	042004637-0014	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-15	Soil			Not QA	042004637-0015	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-16	Soil			Not QA	042004637-0016	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-17	Soil			Not QA	042004637-0017	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-18	Soil			Not QA	042004637-0018	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-19	Soil			Not QA	042004637-0019	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	OA 3/5/2020
SS-01	Soil			LD	042004637-0001	Brown-Non-Fib	Tremolite	TR	U			U			U			U			U			U			U			U			U			U				No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil			LD	042004637-0007	Brown-Non-Fib	Actinolite	AC	U			U			U			U			U			U			U			U			U			U				No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil			LD	042004637-0012	Brown-Non-Fib	Actinolite	AC	U			U			U			trace			U			U			U			U			U			U				No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

Site or Project Name:	R35754
State/Federal Site or Project Identifier:	R35754
Site/Project Identifier Code:	R35754
Lab Name:	EMSL04
Lab Job No:	042004637
Date received by lab:	02/21/20
Analyzed by:	A. Burke
Analysis Date:	3/5/2020

Point Count Method: EPA 600_PC

Data Entry by:	M. Smollock
Data Entry Date:	3/9/2020
QA by:	B. Beatty
QA Date:	3/10/2020

ABBREVIATED NOTES:

(a) Valid QA Types:

Not QA	Not a QA sample
LD	Lab Duplicate

(b) Valid Mineral Types:

AC	actinolite	WRTA	winchite/richterite/tremolite/actinolite
AM	amosite	OA	other amphibole
AN	anthophyllite	NAM	non-asbestos material
CH	chrysotile	OM	other mineral type
CR	crocidolite		(c)*OM Description Standard Selections:*
TR	tremolite		*Taconite*
			Erionite

Client Sample Number	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample Number	Sample Appearance	Points Counted	Counts for each mineral type (b)											Deviation?	Comments
							AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (c)		
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	<0.25% CH - OA 3/5/2020
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	OA 3/5/2020
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	JP 3/5/2020 - Inter-analyst QC
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	AB 3/5/2020 - Intra-analyst QC
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fibrous-Homogeneou	400	0	0	0	0	0	0	0	0	0	0		No	<0.25% CH - AG 3/5/2020 - Inter-analyst QC

R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

National Asbestos Data Entry Spreadsheet (NADES) for Bulk & Soil Analysis by PLM Point Count

ANALYTICAL REPORT

FILE NAME: R35754_EMSL04_042004637_03-05-20_soil_PLM.xlsm

PROJECT INFORMATION		ANALYSIS INFORMATION			ABBREVIATED NOTES	
Site/Project Name:	R35754	**Method:**	**Analysis By:**	A. Burke	(a) Valid QA Types:	(b) Valid Mineral Types:
State/Federal Site/Project Identifier:	R35754	EPA 600_PC	**Analysis Date:**	3/5/2020	**Not QA** - Not a QA sample	**AC** - actinolite **AM** - amosite **AN** - anthophyllite
Site/Project Identifier Code:	R35754		**Data Entry by:**	M. Smollock	**LD** - Lab Duplicate	**CH** - chrysotile **CR** - crocidolite **TR** - tremolite
Lab Name:	EMSL04		**Data Entry Date:**	3/9/2020	(c) OM Description Standard Selections:	**WRTA** - winchite/richterite/tremolite/actinolite
Lab Job Number:	042004637		**QA by:**	B. Beatty		**OA** - other amphibole NAM - non-asbestis material
Date Received by lab:	02/21/20		**QA Date:**	3/10/2020	*Taconite* *Erionite*	**OM** - other mineral type (specify in "other mineral description" field)

							Grav. Reduction		Concentration (%) for each mineral type (b)												
Client Sample ID	Sample Type	Index Suffix ID	QA Type (a)	Lab Sample ID	Sample Appearance	Points Counted	Ash fraction	Acid Fraction	AC	AM	AN	CH	CR	TR	WRTA	OA	NAM	OM	OM Type (b)	**Total (%)**
SS-01	Soil		Not QA	042004637-0001	Brown-Non-Fib	400	1.000	1.000												0.0
SS-02	Soil		Not QA	042004637-0002	Brown-Non-Fib	400	1.000	1.000												0.0
SS-03	Soil		Not QA	042004637-0003	Brown-Non-Fib	400	1.000	1.000												0.0
SS-04	Soil		Not QA	042004637-0004	Brown-Non-Fib	400	1.000	1.000												0.0
SS-05	Soil		Not QA	042004637-0005	Brown-Non-Fib	400	1.000	1.000												0.0
SS-06	Soil		Not QA	042004637-0006	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		Not QA	042004637-0007	Brown-Non-Fib	400	1.000	1.000												0.0
SS-08	Soil		Not QA	042004637-0008	Brown-Non-Fib	400	1.000	1.000												0.0
SS-09	Soil		Not QA	042004637-0009	Brown-Non-Fib	400	1.000	1.000												0.0
SS-10	Soil		Not QA	042004637-0010	Brown-Non-Fib	400	1.000	1.000												0.0
SS-11	Soil		Not QA	042004637-0011	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		Not QA	042004637-0012	Brown-Non-Fib	400	1.000	1.000												0.0
SS-13	Soil		Not QA	042004637-0013	Brown-Non-Fib	400	1.000	1.000												0.0
SS-14	Soil		Not QA	042004637-0014	Brown-Non-Fib	400	1.000	1.000												0.0
SS-15	Soil		Not QA	042004637-0015	Brown-Non-Fib	400	1.000	1.000												0.0
SS-16	Soil		Not QA	042004637-0016	Brown-Non-Fib	400	1.000	1.000												0.0
SS-17	Soil		Not QA	042004637-0017	Brown-Non-Fib	400	1.000	1.000												0.0
SS-18	Soil		Not QA	042004637-0018	Brown-Non-Fib	400	1.000	1.000												0.0
SS-19	Soil		Not QA	042004637-0019	Brown-Non-Fib	400	1.000	1.000												0.0
SS-01	Soil		LD	042004637-0001A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-07	Soil		LD	042004637-0007A	Brown-Non-Fib	400	1.000	1.000												0.0
SS-12	Soil		LD	042004637-0012A	Brown-Non-Fib	400	1.000	1.000												0.0

3. Worksheets/ Bench Sheets

Monthly PLM Bulk QC Summary

Laboratory: EMSL04 **Report #** 1 **Month/Year:** Mar-20

	Date	Reference # xxxx	Sample #	Original Result Analyst	Original Result % Asb	QC Result Analyst	QC Result % Asb	Variance Original	Variance QC	Conclusion	Comment or CAR#
	Variance (Var)		The difference of the 2 results divided by the mean of the 2 results								

Acceptance Criteria

Inter-Analyst:	*The QC Passes when: -1 ≤ Var ≤ 1*
Intra-Analyst:	*The QC Passes when: |Var| ≤ 1*
Qualitative Failure:	*A Qualitative Failure occurs when the Original and QC Asbestos Types Do Not Match*
Warning:	*Warnings Occur when the Original and QC Results are within the variance limits (stated above), but the 2 results are on opposite sides of the >1% ACM definition.*

1	3/5/20	042004637	-0001	AB	0	JP	0	0.00	0.00	Pass	
2	3/5/20	042004637	-0007	AB	0	AB	0	0.00	N/A	Pass	
3	3/5/20	042004637	-0012	OA	<0.25	AG	<0.25	0.00	0.00	Pass	

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM

OPTICAL PROPERTIES DATA RECORDING SHEET

Site/Project Name:	R35754	Date Received by Lab:	2/21/2020
State/Federal Site/Project Identifier:		Method:	EPA 600
Site/Project Identifier Code:	R35754	Analysis By:	AB / OA
Lab Name:	EMSL04	Analysis Date:	3/5/2020
Lab Job Number:	042004637	Media:	~~Bulk~~ Soil MS 2.21.20

Client Sample Number	Index Suffix Char.	Index Suffix No.	Mineral Type	OPTICAL PROPERTIES							
				Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index α	Ref. Index γ	Biref.
SS-01											
SS-02											
SS-03											
SS-04											
SS-05											
SS-06											
SS-07											
SS-08											
SS-09											
SS-10											
SS-11											
SS-12			CH	wavy	clear	+	NO	parallel	1.551	1.557	Low
SS-13											
SS-14											
SS-15											
SS-16											
SS-17											
SS-18											
SS-19											

Comments

VALID MINERAL TYPES

AC	actinolite	CR	crocidolite	NAM	non-asbestos material
AM	amosite	TR	tremolite	OM	other mineral type
AN	anthophyllite	WRTA	winchite/richterite/tremolite/actinolite		*OM Description Standard Selections:*
CH	chrysotile	OA	other amphibole		*Taconite* *Erionite*

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation

SAMPLE/ANALYSIS INFORMATION

Site/Project Name: R35754
State/Federal Site/Project Identifier:
Site/Project Identifier Code: R35754
Lab Name: EMSL04
Lab Job Number: 042004637

Date Received by Lab: 02/21/20
Method: EPA 600
Analysis By: AB | OA
Analysis Date: 3/5/2020
Media: Soil

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (Not QA or Lab Duplicate)	Lab Sample ID	Sample Appearance	Ref Material Description	Base Mineral Type of Reference Material
SS-01	Soil			Not QA	042004637-0001	Brown, nonfibrous, homogeneous	AC	AC
SS-02	Soil			Not QA	042004637-0002	Brown, nonfibrous homogeneous	AC	AC
SS-03	Soil			Not QA	042004637-0003	Brown, nonfibrous homogeneous	AC	AC
SS-04	Soil			Not QA	042004637-0004	Brown, nonfibrous homogeneous	AC	AC
SS-05	Soil			Not QA	042004637-0005	Brown, nonfibrous homogeneous	AC	AC
SS-06	Soil			Not QA	042004637-0006	Brown, nonfibrous homogeneous	AC	AC
SS-07	Soil			Not QA	042004637-0007	Brown, nonfibrous homogeneous	AC	AC
SS-08	Soil			Not QA	042004637-0008	Brown, nonfibrous homogeneous	AC	AC
SS-09	Soil			Not QA	042004637-0009	Brown, nonfibrous homogeneous	AC	AC
SS-10	Soil			Not QA	042004637-0010	Brown, nonfibrous homogeneous	AC	AC
SS-11	Soil			Not QA	042004637-0011	Brown, nonfibrous homogeneous	AC	AC
SS-12	Soil			Not QA	042004637-0012	Brown, nonfibrous homogeneous	TR	TR
SS-13	Soil			Not QA	042004637-0013	Brown, nonfibrous homogeneous	TR	TR
SS-14	Soil			Not QA	042004637-0014	Brown, nonfibrous homogeneous	TR	TR
SS-15	Soil			Not QA	042004637-0015	Brown, nonfibrous homogeneous	TR	TR
SS-16	Soil			Not QA	042004637-0016	Brown, nonfibrous homogeneous	TR	TR
SS-17	Soil			Not QA	042004637-0017	Brown, nonfibrous homogeneous	TR	TR
SS-18	Soil			Not QA	042004637-0018	Brown, nonfibrous homogeneous	TR	TR
SS-19	Soil			Not QA	042004637-0019	Brown, nonfibrous homogeneous	TR	TR

VALID MINERAL TYPES
AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
WRTA - winchite/ richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

COMMENTS:

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation

DATA

Site/Project Name: R35754
Date Received by Lab: 02/21/20
State/Federal Site/Project Identifier:
Method: EPA 600
Site/Project Identifier Code: R35754
Analysis By: AB | DT
Lab Name: EMSL04
Analysis Date: 3/5/2020
Lab Job Number: 042004637
Media: Soil

VALID MINERAL TYPES

AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
WRTA - winchite/richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

OM Description Standard Selections:
Taconite
Erionite

Client Sample Number	Index Suffix Char.	Index Suffix No.	AC			AM			AN			CH			CR			TR			WRTA			OA			NAM			OM				Analysis Deviation	Comments
			Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	OM Type		
SS-01			U			U			U			U			U			U			U			U			U			U				ND	
SS-02			U			U			U			U			U			U			U			U			U			U				ND	
SS-03			U			U			U			U			U			U			U			U			U			U				ND	
SS-04			U			U			U			U			U			U			U			U			U			U				ND	
SS-05			U			U			U			U			U			U			U			U			U			U				ND	
SS-06			U			U			U			U			U			U			U			U			U			U				ND	
SS-07			U			U			U			U			U			U			U			U			U			U				ND	
SS-08			U			U			U			U			U			U			U			U			U			U				ND	
SS-09			U			U			U			U			U			U			U			U			U			U				ND	
SS-10			U			U			U			U			U			U			U			U			U			U				ND	
SS-11			U			U			U			U			U			U			U			U			U			U				ND	
SS-12			U			U			U			0.25			U			U			U			U			U			U				ND	
SS-13			U			U			U			U			U			U			U			U			U			U				ND	
SS-14			U			U			U			U			U			U			U			U			U			U				ND	
SS-15			U			U			U			U			U			U			U			U			U			U				ND	
SS-16			U			U			U			U			U			U			U			U			U			U				ND	
SS-17			U			U			U			U			U			U			U			U			U			U				ND	
SS-18			U			U			U			U			U			U			U			U			U			U				ND	
SS-19			U			U			U			U			U			U			U			U			U			U				ND	

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Point Count

Site/Project Name: R35754
State/Federal Site/Project Identifier:
Site/Project Identifier Code: R35754
Lab Name: EMSL04
Lab Job Number: 042004637

Date Received by Lab: 02/21/20
Method: EPA 600
Analysis By: AB / OA
Analysis Date: 3/5/2020
Media: Soil

VALID MINERAL TYPES

AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
Taconite
WRTA - winchite/ richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

OM Description Standard Selections:
Erionite

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix Number	QA Type (Not QA or LD)	Lab Sample Number	Date Analyzed	Analyst Name	Sample Appearance	Points Counted	AC Counts	AM Counts	AN Counts	CH Counts	CR Counts	TR Counts	LA Counts	OA Counts	NAM Counts	OM Counts	OM Type	Deviation?	Comments
SS-01	Soil			Not QA	042004637-0001	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-02	Soil			Not QA	042004637-0002	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-03	Soil			Not QA	042004637-0003	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-04	Soil			Not QA	042004637-0004	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-05	Soil			Not QA	042004637-0005	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-06	Soil			Not QA	042004637-0006	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-07	Soil			Not QA	042004637-0007	3/5/2020	AB	Brown, nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-08	Soil			Not QA	042004637-0008	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-09	Soil			Not QA	042004637-0009	3/5/2020	AB	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-10	Soil			Not QA	042004637-0010	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-11	Soil			Not QA	042004637-0011	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-12	Soil			Not QA	042004637-0012	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-13	Soil			Not QA	042004637-0013	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-14	Soil			Not QA	042004637-0014	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-15	Soil			Not QA	042004637-0015	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-16	Soil			Not QA	042004637-0016	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-17	Soil			Not QA	042004637-0017	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-18	Soil			Not QA	042004637-0018	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	
SS-19	Soil			Not QA	042004637-0019	3/5/2020	OA	Br. nonfibrous homogeneous	400	0	0	0	0	0	0	0	0	0	0		NO	

Comments

EMSL ANALYTICAL, INC.

4. QC Data Reports/Logs

Page _____ of _____

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM

OPTICAL PROPERTIES DATA RECORDING SHEET

Site/Project Name:	R35754	Date Received by Lab:	2/21/2020
State/Federal Site/Project Identifier:		Method:	EPA 600
Site/Project Identifier Code:	R35754	Analysis By:	AB TP AB
Lab Name:	EMSL04	Analysis Date:	3/5/2020
Lab Job Number:	042004637 QC	Media:	Soil

Client Sample Number	Index Suffix Char.	Index Suffix No.	Mineral Type	OPTICAL PROPERTIES							
				Morph	Fiber Color	Sign Elong. (+/-)	Pleoch (Y/N)	Angle Extinct.	Ref. Index α	Ref. Index γ	Biref.
SS-01											
SS-07											
SS-12			CH	wavy	clear	+	NO	parallel	1.551	1.554	Low

Comments

VALID MINERAL TYPES

AC	actinolite	CR	crocidolite	NAM	non-asbestos material
AM	amosite	TR	tremolite	OM	other mineral type
AN	anthophyllite	WRTA	winchite/richterite/tremolite/actinolite		*OM Description Standard Selections:*
CH	chrysotile	OA	other amphibole		*Taconite* *Erionite*

Page _____ of _____

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation

SAMPLE/ANALYSIS INFORMATION

Site/Project Name: R35754
State/Federal Site/Project Identifier:
Site/Project Identifier Code: R35754
Lab Name: EMSL04
Lab Job Number: 042004637 QC

Date Received by Lab: 02/21/20
Method: EPA 600
Analysis By: AB | AO
Analysis Date: 3/5/20
Media: Soil

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix No.	QA Type (Not QA or Lab Duplicate)	Lab Sample ID	Sample Appearance	Ref Material Description	Base Mineral Type of Reference Material
SS-01	SOIL			LD/RD	001A	brown-tan-fib homogeneous	TR	TR
SS-07	SOIL			LD/RS	007A	brown-tan-fib homogeneous	AC	AC
SS-12	SOIL			LD/RD	012A	brown non-fib. homogeneous	AC	AC

VALID MINERAL TYPES

AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
WRTA - winchite/ richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

COMMENTS:

Page _____ of _____

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Visual Estimation

DATA

Site/Project Name: R35754

State/Federal Site/Project Identifier:

Site/Project Identifier Code: R35754

Lab Name: EMSL04

Lab Job Number: 042004637 QC

Date Received by Lab: 02/21/20

Method: EPA 600

Analysis By: AB 1-5? PLM

Analysis Date: 3/5/2020

Media: Soil

VALID MINERAL TYPES

AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
WRTA - winchite/richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

OM Description Standard Selections:
Taconite
Erionite

Client Sample Number	Index Suffix Char.	Index Suffix No.	AC			AM			AN			CH			CR			TR			WRTA			OA			NAM			OM				Analysis Deviation	Comments
			Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	Qual	AF (%)	MF (%)	OM Type		
SS-01			U			U			U			U			U			U			U			U			U			U				ND	
SS-07			U			U			U			U			U			U			U			U			U			U				ND	
SS-12			U			U			U			0.25			U			U			U			U			U			U				ND	

National Asbestos Data Entry Spreadsheet (NADES) for Bulk and Soil Analysis by PLM Point Count

Site/Project Name: R35754

State/Federal Site/Project Identifier:

Site/Project Identifier Code: R35754

Lab Name: EMSL04

Lab Job Number: 042004637 QC

Date Received by Lab: 02/21/20

Method: EPA 600

Analysis By: AB JP AB

Analysis Date: 3/5/2020

Media: Soil

VALID MINERAL TYPES

AC - actinolite
AM - amosite
AN - anthophyllite
CH - chrysotile
CR - crocidolite
TR - tremolite
Taconite
WRTA - winchite/ richterite/tremolite/actinolite
OA - other amphibole
NAM - non-asbestos material
OM - other mineral type

OM Description Standard Selections:
Erionite

Client Sample Number	Sample Type	Index Suffix Char.	Index Suffix Number	QA Type (Not QA or LD)	Lab Sample Number	Date Analyzed	Analyst Name	Sample Appearance	Points Counted	AC Counts	AM Counts	AN Counts	CH Counts	CR Counts	TR Counts	LA Counts	OA Counts	NAM Counts	OM Counts	OM Type	Deviation?	Comments
SS-01					001	3/5/2020	JP	brown, fine FID- boring	400	0	0	0	0	0	0	0	0	0	0	0	NO	
SS-07					007	3/5/2020	AB	dark brown, fine with rock fragments	400	0	0	0	0	0	0	0	0	0	0	0	NO	
SS-12					012	3/5/2020	AB	brown fine	400	0	0	0	0	0	0	0	0	0	0	0	NO	

Comments

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client: Logged: TAT: **QC**

Address: Date/Time Due:

DAILY
REFERENCE SLIDES

Fax:

Project:

Special Instructions	Order Number

Macroscopic

COLOR (C)
1 Brown 4 White 7 Black
2 Gray 5 Red 8 Silver
3 Tan 6 Various 9 Blue
10 Yellow

TEXTURE (T)
1 Fibrous 2 Non-Fibrous 3 Other

HOMOGENEITY (H)
1 Homogeneous 3 OTHER
2 Heterogeneous 4 Layers (#)

Treatment
1 Teased
2 Crushed
3 Dissolved
4 Ashed
5 Heated
6 Melted

COMPONENT TYPES

Asbestos
1 Chrysotile
2 Amosite
3 Anthophyllite
4 Tremolite
5 Actinolite
6 Crocidolite

Fibrous
7 Cellulose
8 Glass
9 Min. Wool
10 Synthetic
11 Other
12 Wollastonite
13 Hair

Non-Fibrous
14 Quartz
15 Mica
16 Gypsum
17 Cal. Carbonate
18 Matrix
19 Perlite
20 Other

MICROSCOPIC
Optical Properties

Morphology (M): 1. Wavy 4. Scaled 7. Fibril 8. Matchstick 9. Exotic Shapes 10. Other
Sign of Elongation (E): 1. + 2. - 3. Variable
Pleochroism (P): 1. Yes 2. No
Birefringence (B): 1 Low: ≤ 0.010 2 Med 0.011-0.050 3 High >0.050 4 None 0.00 or Isotropic
Fiber Color (FC): 1 White 2 Brown 3 Beige 4 Blue 5 Green 6 Colorless
Extinction (E): 1. Parallel 2. Symmetrical 3. Oblique 4. Undulose

Sample	Macrosc.	Treat	Stereo Asbestos Est. %	Asbestos Type	% of Asbestos	Other Fibrous Type	Other Fibrous %	Non-Fibrous Type	Non-Fibrous %	Non-Asb Char. Ex. E4	Optical Properties
3/1/20 H	(C) (T) AB (H)			1	40	7	20	20	40	M4	1.551 ⊥ R.I. 1.556 ∥ R.I.; 1 M 1 S; 2P 1 B (FC) 6 1 E
3/2/20 P	(C) (T) AB (H)			5	11.43			20	88.57		1.609 ⊥ R.I. 1.622 ∥ R.I.; 2 M 1 S; 2P 2B (FC) 6 3 E
3/3/20 Z	(C) (T) AB (H)			ND	—			20	100		⊥ R.I. ∥ R.I.; M S; P B (FC) E
3/4/20 O	(C) (T) AB (H)			2	9.76	9	30	20	60.24		1.682 ⊥ R.I. 1.704 ∥ R.I.; 2 M 1 S; 2P 2B (FC) 6 1 E
3/5/20 L	(C) (T) AB (H)			4	8.16			20	91.84		1.607 ⊥ R.I. 1.624 ∥ R.I.; 2 M 1 S; 2P 2B (FC) 6 3 E
	(C) (T) (H)							20			⊥ R.I. ∥ R.I.; M S; P B (FC) E
	(C) (T) (H)							20			⊥ R.I. ∥ R.I.; M S; P B (FC) E
	(C) (T) (H)							20			⊥ R.I. ∥ R.I.; M S; P B (FC) E
	(C) (T) (H)							20			⊥ R.I. ∥ R.I.; M S; P B (FC) E
	(C) (T) (H)							20			⊥ R.I. ∥ R.I.; M S; P B (FC) E

10.1 22.2 22.2 22.4 22.2 22.5 3/5/2020

Analyst: D. Alkhundy Date: 3/2020 Computer: _____ Date: _____

Room Temp (C): ~ 22.

EMSL Point Count Sheet
Revision 3.0
November 1,2012

POINT COUNT WORKSHEET

Date: 3/5/20

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					7
2	1					11
3	1					14
4	1					13
5						
6						
7						
8						
9						
10						
Total	4					45

Results: ~~A~~ Tremolite = 8.16%
OA
3/5/20

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

CALCULATIONS: P= (AP * 100)/TP
P = Percentage of Asbestos   TP = Total number of non-empty Points
AP = number of Asbestos Points
NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"
NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst O.A.

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client:
Logged:
TAT: **QC**

Address:
Date/Time Due:

DAILY REFERENCE SLIDES

Fax:
Project:

Special Instructions

Order Number

		COMPONENT TYPES		MICROSCOPIC
Macroscopic	Treatment	Asbestos	Fibrous	Non-Fibrous	Optical Properties
COLOR (C) 1 Brown 4 White 7 Black 2 Gray 5 Red 8 Silver 3 Tan 6 Various 9 Blue 10 Yellow TEXTURE (T) 1 Fibrous 2 Non-Fibrous 3 Other HOMOGENEITY (H) 1 Homogeneous 3 OTHER 2 Heterogeneous 4 Layers (#)	1 Teased 2 Crushed 3 Dissolved 4 Ashed 5 Heated 6 Melted	1 Chrysotile 2 Amosite 3 Anthophyllite 4 Tremolite 5 Actinolite 6 Crocidolite	7 Cellulose 8 Glass 9 Min. Wool 10 Synthetic 11 Other 12 Wollastonite 13 Hair	14 Quartz 15 Mica 16 Gypsum 17 Cal. Carbonate 18 Matrix 19 Perlite 20 Other	Morphology (M) 1. Wavy 2. Straight 3. Uniform Diameter 4. Ribbon-Like 5. Tapered Ends 6. Sealed 7. Pitted 8. Medulla 9. Exotic Shapes 10. Other Sign of Elongation (S) 1. + 2. - 3. Variable Pleochroism (P) 1. Yes 2. No Birefringence (B) 1 Low: ≤0.010 2 Med 0.011-0.050 3 High >0.050 4 None 0.00 or Isotropic Fiber Color (FC) 1 White 2 Brown 3 Beige 4 Blue 5 Green 6 Colorless Extinction (E) 1. Parallel 2. Symmetrical 3. Oblique 4. Undulose

Sample	Macrosc.	Treat	Stereo Asbestos Est. %	Asbestos Type	% of Asbestos	Other Fibrous Type	Other Fibrous %	Non-Fibrous Type	Non-Fibrous %	Non-Asb Char. Ex. E4	Optical Properties				
P	(C)			5	4.6			20	95.4		1.605 ⊥ R.I.		1.619 || R.I.		
	(T)										2 M		1 S		22.5C
3/2/2020	(H)										2 P	2 B	(FC) 6	3 E	
O	(C)			2	5.3	8	15	20	79.7	M3	1.680 ⊥ R.I.		1.698 || R.I.		
	(T)										2 M		1 S		22.5°C
3/4/2020	(H)										2 P	2 B	(FC) 6	1 E	
L	(C)			5	11.1			20	88.9		1.606 ⊥ R.I.		1.619 || R.I.		
	(T)										2 M		1 S		22.7°C
3/5/2020	(H)										2 P	2 B	(FC) 6	3 E	
LC	(C)			ND				20	100		⊥ R.I.		|| R.I.		
	(T)										M		S		22.5C
3/6/2020	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	
	(C)							20			⊥ R.I.		|| R.I.		
	(T)										M		S		
	(H)										P	B	(FC)	E	

Analyst: Date: 3/2/2020 – 3/6/2020 Computer: 27 Date:

Room Temp (C):

POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					6
2	1					4
3	1					15
4	1					7
5						
6						
7						
8						
9						
10						
Total	4					32

Results: 4/36= 11.11% Actinolite ✓

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

CALCULATIONS: P= (AP * 100)/TP
P = Percentage of Asbestos   TP = Total number of non-empty Points
AP = number of Asbestos Points
NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"
NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst Andrew Burke

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client:
Logged:
TAT: **QC**
Address:
Date/Time Due:

DAILY REFERENCE SLIDES

Fax:
Project:

Special Instructions

Order Number

COMPONENT TYPES				MICROSCOPIC
Macroscopic	**Treatment**	**Asbestos**	**Fibrous**	**Non-Fibrous**
COLOR (C) 1 Brown 2 Gray 3 Tan 4 White 5 Red 6 Various 7 Black 8 Silver 9 Blue 10 Yellow	1 Teased 2 Crushed 3 Dissolved 4 Ashed 5 Heated 6 Melted	1 Chrysotile 2 Amosite 3 Anthophyllite 4 Tremolite 5 Actinolite 6 Crocidolite	7 Cellulose 8 Glass 9 Min. Wool 10 Synthetic 11 Other 12 Wollastonite 13 Hair	14 Quartz 15 Mica 16 Gypsum 17 Cal. Carbonate 18 Matrix 19 Perlite 20 Other
TEXTURE (T) 1 Fibrous 2 Non-Fibrous 3 Other				
HOMOGENEITY (H) 1 Homogeneous 2 Heterogeneous 3 OTHER 4 Layers (#)				

Optical Properties

Morphology (M)	Sign of Elongation (S)
1. Wavy 2. Straight 3. Uniform Diameter 4. Ribbon-Like 5. Tapered Ends 6. Scaled 7. Pitted 8. Medulla 9. Exotic Shapes 10. Other	1. + 2. - 3. Variable

Pleochroism (P)	Birefringence (B)	Fiber Color (FC)	Extinction (E)
1. Yes 2. No	1 Low: ≤0.010 2 Med 0.011-0.050 3 High >0.050 4 None 0.00 or Isotropic	1 White 2 Brown 3 Beige 4 Blue 5 Green 6 Colorless	1. Parallel 2. Symmetrical 3. Oblique 4. Undulose

Sample	Macrosc.	Treat	Stereo Asbestos Est. %	Asbestos Type	% of Asbestos	Other Fibrous Type	%	Non-Fibrous Type	%	Non-Asb Char. Ex. E4	Optical Properties				
3/2/20 P	(C)			5	10.5			20	89.5		1.605	⊥ R.I.	1.618	‖ R.I.	22.1°C
	(T) CO✓											2 M	1	S	
	(H)										P 2	2 B	(FC) 6	3 E	
3/3/20 Z	(C)			ND				20	100			⊥ R.I.		‖ R.I.	22.2°C
	(T) CO✓											M		S	
	(H)										P	B	(FC)	E	
3/4/20 O	(C)			2	6.5			20	93.5		1.680	⊥ R.I.	1.700	‖ R.I.	22.3°C
	(T) CO✓											2 M	1	S	
	(H)										P 2	2 B	(FC) 6	1 E	
3/5/20 L	(C)			5	6.7			20	93.3		1.605	⊥ R.I.	1.621	‖ R.I.	22.4°C
	(T) CO✓											2 M	1	S	
	(H)										P 2	2 B	(FC) 6	3 E	
3/6/20 CC	(C)			ND				20	100			⊥ R.I.		‖ R.I.	22.1°C
	(T) CO✓											M		S	
	(H)										P	B	(FC)	E	
	(C)							20				⊥ R.I.		‖ R.I.	
	(T)											M		S	
	(H)										P	B	(FC)	E	
	(C)							20				⊥ R.I.		‖ R.I.	
	(T)											M		S	
	(H)										P	B	(FC)	E	
	(C)							20				⊥ R.I.		‖ R.I.	
	(T)											M		S	
	(H)										P	B	(FC)	E	
	(C)							20				⊥ R.I.		‖ R.I.	
	(T)											M		S	
	(H)										P	B	(FC)	E	
	(C)							20				⊥ R.I.		‖ R.I.	
	(T)											M		S	
	(H)										P	B	(FC)	E	

Analyst: Adam Gat Date: ____________ Computer: ______________ Date: __________

Room Temp (C): ________

EMSL Point Count Sheet
Revision 3.0
November 1,2012

POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1	1					17
2	1					12
3	1					16
4	1					11
5						
6						
7						
8						
9						
10						
Total	4					56

CO✓ Results: 6.7% Actinolite

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

CALCULATIONS: P= (AP * 100)/TP
P = Percentage of Asbestos TP = Total number of non-empty Points
AP = number of Asbestos Points
NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"
NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst Adam Graft

Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Client:

Logged:

TAT: QC

Address:

Date/Time Due:

DAILY
REFERENCE SLIDES

Fax:

Project:

Special Instructions	Order Number

	COMPONENT TYPES			MICROSCOPIC
Macroscopic	**Treatment** / **Asbestos**	**Fibrous**	**Non-Fibrous**	**Optical Properties**

Macroscopic	Treatment	Asbestos	Fibrous	Non-Fibrous
COLOR (C) 1 Brown 4 White 7 Black 2 Gray 5 Red 8 Silver 3 Tan 6 Various 9 Blue 10 Yellow TEXTURE (T) 1 Fibrous 2 Non-Fibrous 3 Other HOMOGENEITY (H) 1 Homogeneous 3 OTHER 2 Heterogeneous 4 Layers (#)	1 Teased 2 Crushed 3 Dissolved 4 Ashed 5 Heated 6 Melted	1 Chrysotile 2 Amosite 3 Anthophyllite 4 Tremolite 5 Actinolite 6 Crocidolite	7 Cellulose 8 Glass 9 Min. Wool 10 Synthetic 11 Other 12 Wollastonite 13 Hair	14 Quartz 15 Mica 16 Gypsum 17 Cal. Carbonate 18 Matrix 19 Perlite 20 Other

Morphology (M)	Sign of Elongation (S)
1. Wavy 2. Straight 3. Uniform Diameter 4. Ribbon-Like 5. Tapered Ends 6. Scaled 7. Pitted 8. Medulla 9. Exotic Shapes 10. Other	1. + 2. - 3. Variable

Pleochroism (P)	Birefringence (B)	Fiber Color (FC)	Extinction (E)
1. Yes 2. No	1 Low: ≤0.010 2 Med 0.011-0.050 3 High >0.050 4 None 0.00 or Isotropic	1 White 2 Brown 3 Beige 4 Blue 5 Green 6 Colorless	1. Parallel 2. Symmetrical 3. Oblique 4. Undulose

Sample	Macrosc.		Treat	Stereo Asbestos Est. %	Asbestos Type	% of Asbestos	Other Fibrous Type	%	Non-Fibrous Type	%	Non-Asb Char. Ex. E4	Optical Properties			
3/4/20 ○	(C)				2	7.69			20	92.30			1.658 ⊥ R.I.		1.699 ‖ R.I.
	(T)	2 3 5											2 M		1 S
	(H)											P 2	2 B	(FC) 6	1 E
3/5/20 ✓	(C)	2 3.5			4	5.55			20	94.44			1.628 ⊥ R.I.		1.631 ‖ R.I.
	(T)												2 M		1 S
	(H)											P 2	1 B	(FC) 6	3 E
3/6/20 C	(C)				ND				20	100			⊥ R.I.		‖ R.I.
	(T)	2 3 1											M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E
	(C)								20				⊥ R.I.		‖ R.I.
	(T)												M		S
	(H)											P	B	(FC)	E

Analyst: JF Date: 3/5/2020 Computer: ______ Date: ______

Room Temp (C):______

POINT COUNT WORKSHEET

Date: 3/5/2020

Client: Reference Slide L

Billing #: ELAP 414 Sample 4067

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						15
2						20
3						18
4						15
5						
6						
7						
8						
9						
10						
Total						

Results: 555 tremolite ✓

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

Sample:

PREP #	Asbestos Type 1	Asbestos Type 2	Cellulose	Glass	Other Fib	Non Fib
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
Total						

Results:

CALCULATIONS: P= (AP * 100)/TP
P = Percentage of Asbestos   TP = Total number of non-empty Points
AP = number of Asbestos Points
NOTE: IF AP = 0 after completion of analysis and no asbestos was observed, Report "ND"
NOTE: IF AP = 0 after completion of analysis but asbestos was observed, Report "< Analytical Sensitivity"

Analyst JP

EMSL ANALYTICAL, INC.

5. Client and EMSL Internal Chains of Custody

USEPA CLP COC (LAB COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777817941333

CHAIN OF CUSTODY RECORD
042004637
DAS #: R35754
Cooler #: K27

No: 3-022020-124148-0001
Lab: EMSL Analytical, Inc.
Lab Contact: Robyn Ray
Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-01	R35754-01	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1050 (None) (1)	P-01	02/19/2020 09:15	
SS-02	R35754-02	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1054 (None) (1)	P-02	02/19/2020 09:37	
SS-03	R35754-03	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1057 (None) (1)	P-03	02/19/2020 10:05	
SS-04	R35754-04	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1060 (None) (1)	P-03	02/19/2020 10:10	
SS-05	R35754-05	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1063 (None) (1)	P-04	02/19/2020 10:20	
SS-06	R35754-06	Soil/ Ben Evick	Grab	Asbest(21)	3-1066 (None) (1)	P-05	02/19/2020 10:35	
SS-07	R35754-07	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1069 (None) (1)	P-06	02/19/2020 10:50	
SS-08	R35754-08	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1072 (None) (1)	P-07	02/19/2020 11:15	
SS-09	R35754-09	Soil/ Ben Evick	Grab	Asbest(21)	3-1075 (None) (1)	P-08	02/19/2020 11:50	
SS-10	R35754-10	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1078 (None) (1)	P-09	02/19/2020 11:55	
SS-11	R35754-11	Soil/ Ben Evick	Grab	Asbest(21)	3-1081 (None) (1)	P-10	02/19/2020 12:20	
SS-12	R35754-12	Soil/ Ben Evick	Grab	Asbest(21)	3-1084 (None) (1)	P-11	02/19/2020 13:25	

RECEIVED
2020 FEB 21 A 10:55
CINNAMINSON, NJ

Special Instructions: Please return cooler with FedEx return label

Samplers: Ben Evick Matthew Ridgway

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Asbest=Asbestos

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Ben Evick Techlaw	2/20/20 1700	[illegible] EMSL 7778 Fx	2/21/20	Acceptable 10:40

Fx: 7778 1794 1333

USEPA CLP COC (LAB COPY)
DateShipped: 2/20/2020
CarrierName: FedEx
AirbillNo: 777817941333

CHAIN OF CUSTODY RECORD
042004637
DAS #: R35754
Cooler #: K27

No: 3-022020-124148-0001
Lab: EMSL Analytical, Inc.
Lab Contact: Robyn Ray
Lab Phone: 856-303-2556

Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
SS-13	R35754-13	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1087 (None) (1)	P-12	02/19/2020 13:30	
SS-14	R35754-14	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1090 (None) (1)	P-12	02/19/2020 13:40	
SS-15	R35754-15	Soil/ Ben Evick	Grab	Asbest(21)	3-1093 (None) (1)	P-13	02/19/2020 14:07	
SS-16	R35754-16	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1096 (None) (1)	P-14	02/19/2020 14:23	
SS-17	R35754-17	Soil/ Ben Evick	Grab	Asbest(21)	3-1099 (None) (1)	B-15	02/19/2020 14:45	
SS-18	R35754-18	Soil/ Matthew Ridgway	Grab	Asbest(21)	3-1102 (None) (1)	B-16	02/19/2020 15:10	
SS-19	R35754-19	Soil/ Ben Evick	Grab	Asbest(21)	3-1105 (None) (1)	B-17	02/19/2020 15:35	

RECEIVED
2020 FEB 21 A 10:55
CINNAMINSON, NJ

Special Instructions: Please return cooler with FedEx return label

Samplers: Ben Evick Matthew Ridgway

Shipment for Case Complete? Y

Samples Transferred From Chain of Custody #

Analysis Key: Asbest=Asbestos

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	Ben Evick TechLaw	2/20/20 1700	M Mallock EMSL	2-21-20 10:40 am	Acceptable

INTERNAL CHAIN OF CUSTODY

Order ID: 042004637 *2/21/2020 12:12:26 PM*

Attn: Gene Nance
TechLaw Inc.
139 Peninsula St.
Wheeling, WV 26003

Fax: Phone: (304) 230-1230

Project: **DAS #R35754**

Customer ID: TCHL75
Customer PO:
Received: 02/21/20 10:40 AM

EMSL Order: 042004637
EMSL Proj ID:
Cust COC ID 3-022020-124148-0001
Project Type: Asb Special Project

REPORT TO INSTRUCTIONS

☐ Send Receipt Confirmation Emails
☐ No electronic signatures
☐ Project ID required
☐ Cust. COC ID required
☐ Miscellaneous account

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Accounting Terms: N30

Sales Rep and Comment: jsilverman

Instructions

BILL TO INSTRUCTIONS

☐ Exempt from prep charge
☐ Exempt from off hour min charges
☐ Exempt from layer/aliquot charges
☐ Authorization to use credit card
☐ P.O. Required

Billing Frequency
With Report -- Create and send an invoice for each Order ID

Use Billing Contact:

Accounting Terms: N30

Payment Directions: With Report

Instructions

Internal Comment

Test: **PLM 400 Point Count w Milling** **Matrix** Bulk **TAT:** 2 Week **Qty:** 19

Desc: **Asbestos Analysis of Bulk Building Materials via EPA 600/R-93/11**

Logged: msmollock 2/21/2020

Signoff: msmollock 2/21/2020

☐ Lab Opening Exempt For Test
☐ Prep Charge Exempt For Test
☐ Layer/Aliquot Charge Exempt For Test
☐ Free Shipping Eligible

Sample Condition: ☐ Acceptable ☐ Unacceptable

Comments

Please use NADES bench sheets & enter results in iLAB

Prepped: BS **Date** 2/24/20
Analyzed: AB BA **Date** 3/5/2020
Data Entry ⊥ ⊥ **Date** ⊥ ⊥
Screened: BK **Date** 3/6/20
Mailed: **Date**
Scanned Internal Docs: **Date**

Special Test Instructions

Lab Sample #	Cust. Sample #	Location	Due Date
042004637-0001	SS-01	P-01	3/6/2020 10:40:00 AM
042004637-0002	SS-02	P-02	3/6/2020 10:40:00 AM
042004637-0003	SS-03	P-03	3/6/2020 10:40:00 AM
042004637-0004	SS-04	P-03	3/6/2020 10:40:00 AM
042004637-0005	SS-05	P-04	3/6/2020 10:40:00 AM
042004637-0006	SS-06	P-05	3/6/2020 10:40:00 AM
042004637-0007	SS-07	P-06	3/6/2020 10:40:00 AM
042004637-0008	SS-08	P-07	3/6/2020 10:40:00 AM

INTERNAL CHAIN OF CUSTODY

Order ID: 042004637 *2/21/2020 12:12:26 PM*

Attn: Gene Nance
TechLaw Inc.
139 Peninsula St.
Wheeling, WV 26003

Fax: Phone: (304) 230-1230

Project: **DAS #R35754**

Customer ID: TCHL75
Customer PO:
Received: 02/21/20 10:40 AM

EMSL Order: 042004637
EMSL Proj ID:
Cust COC ID 3-022020-124148-0001
Project Type: Asb Special Project

Lab Sample #	Cust. Sample #	Location	Due Date
042004637-0009	SS-09	P-08	3/6/2020 10:40:00 AM
042004637-0010	SS-10	P-09	3/6/2020 10:40:00 AM
042004637-0011	SS-11	P-10	3/6/2020 10:40:00 AM
042004637-0012	SS-12	P-11	3/6/2020 10:40:00 AM
042004637-0013	SS-13	P-12	3/6/2020 10:40:00 AM
042004637-0014	SS-14	P-12	3/6/2020 10:40:00 AM
042004637-0015	SS-15	P-13	3/6/2020 10:40:00 AM
042004637-0016	SS-16	P-14	3/6/2020 10:40:00 AM
042004637-0017	SS-17	B-15	3/6/2020 10:40:00 AM
042004637-0018	SS-18	B-16	3/6/2020 10:40:00 AM
042004637-0019	SS-19	B-17	3/6/2020 10:40:00 AM

6. Equipment Performance Checks

PLM Calibration & Contamination Records

Lab ID: 04 PLM Scope #: PLM-04-0011 Date Range: 03/05/2020 to 03/05/2020

		Daily							Monthly
Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Record Wavelength (nm) (Amosite DS) ∥ ⊥
03/05/2020	jpatel	✓	✓	✓	✓	✓	1		

PLM Calibration & Contamination Records

Lab ID: 04 PLM Scope #: PLM-04-0019 Date Range: 03/05/2020 to 03/05/2020

		Daily							Monthly
Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Record Wavelength (nm) (Amosite DS) ∥ ⊥
03/05/2020	agart	✓	✓	✓	✓	✓	2		

PLM Calibration & Contamination Records

Lab ID: 04 PLM Scope #: PLM-04-0025 Date Range: 03/05/2020 to 03/05/2020

		Daily							Monthly
Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Record Wavelength (nm) (Amosite DS) ‖ ⊥
03/05/2020	oakintunde	✓	✓	✓	✓	✓	3		

PLM Calibration & Contamination Records

Lab ID: 04 PLM Scope #: PLM-04-0027 Date Range: 03/05/2020 to 03/05/2020

		Daily							Monthly
Date	Analyst	Illumination Aligned	Stage / Objective Centered	Condenser Focused / Centered	Analyzer / Polarizer 90 Degrees	Ocular Alignment with NIST Anthophyllite	Contamination Check(s)	Contamination Details	Record Wavelength (nm) (Amosite DS) ‖ ⊥
03/05/2020	aburke	✓	✓	✓	✓	✓	2		

EMSL ANALYTICAL, INC.

7. NVLAP/AIHA Certifications

United States Department of Commerce
National Institute of Standards and Technology

Certificate of Accreditation to ISO/IEC 17025:2017

NVLAP LAB CODE: 101048-0

EMSL Analytical, Inc.

Cinnaminson, NJ

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

Asbestos Fiber Analysis

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).

2019-07-01 through 2020-06-30

Effective Dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

For the National Voluntary Laboratory Accreditation Program

National Voluntary Laboratory Accreditation Program

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

EMSL Analytical, Inc.
200 Route 130 North
Cinnaminson, NJ 08077
Mr. Ben Ellis
Phone: 800-220-3675 Fax: 856-786-5973
Email: bellis@emsl.com
http://www.emsl.com

ASBESTOS FIBER ANALYSIS — NVLAP LAB CODE 101048-0

Bulk Asbestos Analysis

Code	*Description*
18/A01	EPA -- 40 CFR Appendix E to Subpart E of Part 763, Interim Method of the Determination of Asbestos in Bulk Insulation Samples
18/A03	EPA 600/R-93/116: Method for the Determination of Asbestos in Bulk Building Materials

Airborne Asbestos Analysis

Code	*Description*
18/A02	U.S. EPA's "Interim Transmission Electron Microscopy Analytical Methods-Mandatory and Nonmandatory-and Mandatory Section to Determine Completion of Response Actions" as found in 40 CFR, Part 763, Subpart E, Appendix A.

For the National Voluntary Laboratory Accreditation Program

Effective 2019-07-01 through 2020-06-30

AIHA Laboratory Accreditation Programs, LLC

acknowledges that

EMSL Analytical, Inc.

200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: 100194

along with all premises from which key activities are performed, as listed above, has fulfilled the requirements of the AIHA Laboratory Accreditation Programs (AIHA-LAP), LLC accreditation to the ISO/IEC 17025:2005 international standard, *General Requirements for the Competence of Testing and Calibration Laboratories* in the following:

LABORATORY ACCREDITATION PROGRAMS

✓	**INDUSTRIAL HYGIENE**	Accreditation Expires: November 01, 2020
✓	**ENVIRONMENTAL LEAD**	Accreditation Expires: November 01, 2020
✓	**ENVIRONMENTAL MICROBIOLOGY**	Accreditation Expires: November 01, 2020
☐	**FOOD**	Accreditation Expires:
☐	**UNIQUE SCOPES**	Accreditation Expires:

Specific Field(s) of Testing (FoT)/Method(s) within each Accreditation Program for which the above named laboratory maintains accreditation is outlined on the attached **Scope of Accreditation**. Continued accreditation is contingent upon successful on-going compliance with ISO/IEC 17025:2005 and AIHA-LAP, LLC requirements. This certificate is not valid without the attached **Scope of Accreditation**. Please review the AIHA-LAP, LLC website (www.aihaaccreditedlabs.org) for the most current Scope.

Beth Bair

Elizabeth Bair
Chairperson, Analytical Accreditation Board

Cheryl O. Morton

Cheryl O. Morton
Managing Director, AIHA Laboratory Accreditation Programs, LLC

Revision 17 – 09/11/2018

Date Issued: 11/30/2018

AIHA Laboratory Accreditation Programs, LLC
SCOPE OF ACCREDITATION

EMSL Analytical, Inc.
200 Route 130 North, Cinnaminson, NJ 08077

Laboratory ID: **100194**
Issue Date: 11/30/2018

The laboratory is approved for those specific field(s) of testing/methods listed in the table below. Clients are urged to verify the laboratory's current accreditation status for the particular field(s) of testing/Methods, since these can change due to proficiency status, suspension and/or withdrawal of accreditation.

Industrial Hygiene Laboratory Accreditation Program (IHLAP)

Initial Accreditation Date: 02/01/1989

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte (*for internal methods only*)
Chromatography Core	Gas Chromatography	GC/FID	NIOSH 1003 Modified	
			NIOSH 1005 Modified	
			NIOSH 1400 Modified	
			NIOSH 1500 Modified	
			NIOSH 1501 Modified	
			NIOSH 1550 Modified	
			NIOSH 1603 Modified	
			NIOSH 2000 Modified	
		GC/ECD	NIOSH 5502 Modified	
			NIOSH 5503 Modified	
			NIOSH 5510 Modified	
			OSHA 1010 Modified	
	GC/MS		EPA TO-15	
	Gas Chromatography (Diffusive Samplers)		NIOSH 1501 Modified	
	Ion Chromatography (IC)		NIOSH 6004 Modified	
			NIOSH 6011	
			NIOSH 7903	
			OSHA ID-214	
			OSHA ID-215 Modified	
	Liquid Chromatography	HPLC/FL	NIOSH 2016 Modified	
		HPLC/UV	NIOSH 5506 Modified	
		LC/MS	NIOSH 9111 Modified	

IHLAP Scope Category	Field of Testing (FoT) (FoTs cover all relevant IH matrices)	Technology sub-type/ Detector	Published Reference Method/Title of In-house Method	Method Description or Analyte *(for internal methods only)*
Spectrometry Core	Atomic Absorption	CVAA	NIOSH 6009 Modified	
			OSHA ID-140 Modified	
			OSHA ID-145	
		FAA	NIOSH 7082	
		GFAA	NIOSH 7105	
	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300 Modified	
		ICP/AES	NIOSH 7300 Modified	
	X-ray Diffraction (XRD)		NIOSH 7500 Modified	
			OSHA ID-142 Modified	
	UV/VIS (Colorimetric)		NIOSH 6010 Modified	
Asbestos/Fiber Microscopy Core	Polarized Light Microscopy (PLM)		EPA 600/R-93/116	
	Phase Contrast Microscopy (PCM)		NIOSH 7400	
	Transmission Electron Microscopy (TEM)		EPA AHERA - 40 CFR Part 763	EPA AHERA Method (40 CFR 763, Subpart E, Appendix A, Mandatory Method
			NIOSH 7402	
Miscellaneous Core	Gravimetric		NIOSH 0500	
			NIOSH 0600	
			NIOSH 5524	
	Thermo-optical Analysis (TOA)		NIOSH 5040	
Beryllium Testing	Inductively-Coupled Plasma	ICP/MS	NIOSH 7300	
			NIOSH 7303	

A complete listing of currently accredited Industrial Hygiene laboratories is available on the AIHA-LAP, LLC website at: http://www.aihaaccreditedlabs.org

EMSL ANALYTICAL, INC.

8. Customer Correspondence

Exhibit A - SCOPE OF WORK
Asbestos Analysis by PLM
TechLaw-Wheeling Project No. R35754

1. Laboratory will provide containers for the number of samples and matrices specified in the attached Exhibit B – RFQ Bid Sheet. The containers will be shipped to the TechLaw-Wheeling, WV office. The sampling is scheduled to be conducted on February 18-21, 2020. ***The sample containers must be shipped to arrive no later than February 17, 2020.***

2. The laboratory must be NVLAP certified.

3. The samples will be analyzed for asbestos by polarized light microscopy (PLM) using EPA 600/5/93/116 (or equivalent). Sample preparation will include milling similar to procedures in CARB 435; however, milling should be discontinued as soon as the material being milled appears homogeneous, in order to reduce the potential for mechanically reducing fiber size. This should be documented in the lab narrative report. The lab will perform a 400-point counting procedure (maximum of eight slides with 50 counts each to minimum of two slides with 200 counts each) to achieve a reporting limit for asbestos in soil at 0.25%, if feasible. Analytical results are to be reported below the reporting limit (RL) down to the method detection limit. The Target Analyte List (TAL) of asbestos fibers/materials is presented in **Attachment 1.**

4. **TAT:** Request 10 business days TAT for all Level II reports and 15 business days TAT for the Level IV (CLP-like) reports and electronic data deliverables (EDDs) in the National Asbestos Data Entry Spreadsheet (NADES) format.

5. **Data Deliverables:** Level II report, Level IV (CLP-Like) data package, and EDD (in NADES format). The Level IV data package should include documentation required for independent, third party data validation in accordance with *USEPA PLM VALIDATION PROCESS GUIDELINES For Asbestos Data Review,* OLEM Directive 9200.2-179, October 2016. **Attachment 2** provides the documentation that will be required in the Final/Level IV data package. The EDD will be in the NADES format.

6. **Sampling schedule:**

   The sampling is scheduled for February 18-21, 2020.

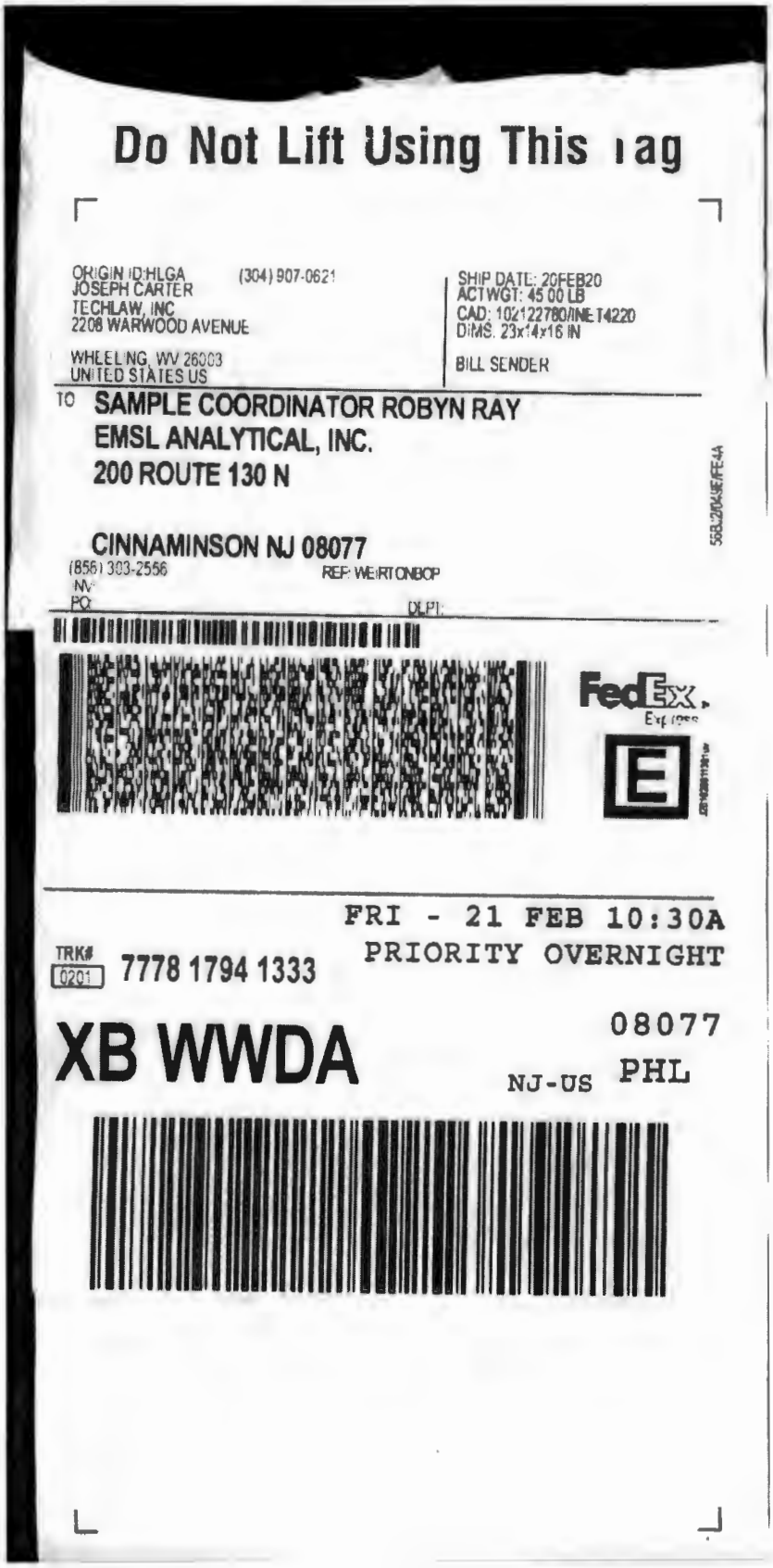
7. **Bid due date: Friday, February 7, 2020 at 1:00 p.m. EST.** Bids should be submitted electronically to Gene Nance at: gene.nance@techlawinc.com.

NOTE: ***Bid price should include cost of analysis, shipping fee (to Wheeling, WV), data package, and any other associated costs (e.g., waste disposal, taxes, etc.).***

Attachments

EMSL ANALYTICAL, INC.

9. Shipping Documentation



Do Not Lift Using This Tag

ORIGIN ID:HLGA (304) 907-0621
JOSEPH CARTER
TECHLAW, INC
2208 WARWOOD AVENUE

WHEELING, WV 26003
UNITED STATES US

SHIP DATE: 20FEB20
ACTWGT: 45.00 LB
CAD: 102122780/INET4220
DIMS: 23x14x16 IN

BILL SENDER

TO SAMPLE COORDINATOR ROBYN RAY
EMSL ANALYTICAL, INC.
200 ROUTE 130 N

CINNAMINSON NJ 08077
(856) 303-2556 REF: WEIRTONBOP
INV:
PO: DEPT:

568J2/04UE/FE44

FedEx Express

FRI - 21 FEB 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7778 1794 1333

XB WWDA

08077
NJ-US PHL


CUSTODY SEAL
Date
Signature
CUSTODY SEAL
Date
Signature
CUSTODY SEAL
Date
Signature
CUSTODY SEAL
Date
Signature

ATTACHMENT 5

PHOTOGRAPHIC DOCUMENTATION

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6802; Taken on 02/19/20 at 9:06 hours by STARTJC. Facing NW. MR collecting Soil sample from first sample point, BE collecting GPS data. CP06, SS-01

2/19/2020
Photo No. IMG_6804; Taken on 02/19/20 at 9:18 hours by STARTJC. Facing Down. First soil sample location, looking at the area disturbed during sample collection, sample tools and sample jars. CP06, SS-01

2/19/2020
Photo No. IMG_6805; Taken on 02/19/20 at 9:34 hours by STARTJC. Facing N. Facing North looking at a utilities building and fenced in area where sample was collected along the fence line. CP08, SS02

2/19/2020
Photo No. IMG_6807; Taken on 02/19/20 at 9:52 hours by STARTJC. Facing ESE. Facing in a southeasterly direction, observing the runoff pathways from the building roof down the slope of the hill. CP08, SS-02

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6811; Taken on 02/19/20 at 10:04 hours by STARTJC. Facing W. Facing West, MR collects soils from property R11, BE collects GPS coordinates. R11, SS-03

2/19/2020
Photo No. IMG_6814; Taken on 02/19/20 at 10:11 hours by STARTJC. Facing Down. Facing Down at the location where soils were collected from a 0-3" interval with a dedicated SS trowel. R11, SS-03

2/19/2020
Photo No. IMG_6819; Taken on 02/19/20 at 10:30 hours by STARTJC. Facing E. Looking up-slope from alley way that bounds the east side of the property, pin flag marks sample location. R10, SS-05

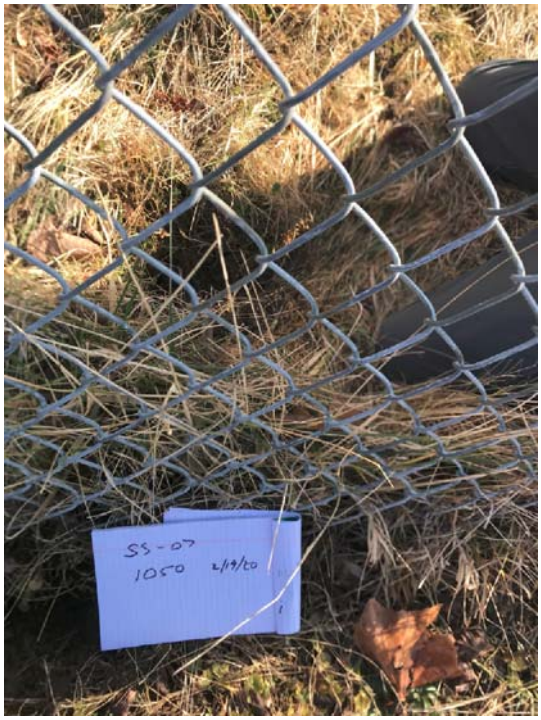
2/19/2020
Photo No. IMG_6820; Taken on 02/19/20 at 10:31 hours by STARTJC. Facing S. Facing south on property R10, pin flag placed in slight depression where soil sample was collected. R10, SS-05

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6821; Taken on 02/19/20 at 10:34 hours by STARTJC. Facing Down. BE collects soils from R12 property location, MR collects GPS coordinates. R12, SS-06

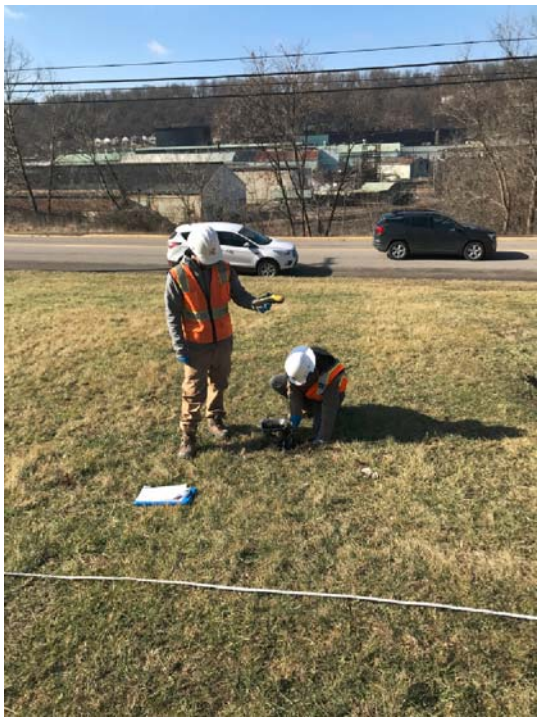
2/19/2020
Photo No. IMG_6822; Taken on 02/19/20 at 10:35 hours by STARTJC. Facing S. BE collects soils from R12 property location, MR collects GPS coordinates. R12, SS-06

2/19/2020
Photo No. IMG_6825; Taken on 02/19/20 at 10:48 hours by STARTJC. Facing E. Facing east, looking up-slope, drainage pathway from house. MR collects sample from parcel CP07, BE collects GPS coordinates. CP07, SS-07



2/19/2020
Photo No. IMG_6828; Taken on 02/19/20 at 10:51 hours by STARTJC. Facing Down. Looking down at the sample collection location, just on the other side of the fence that rings the community basketball court. CP07-SS-07

Weirton BOP Implosion Site Photolog for February 19, 2020



2/19/2020
Photo No. IMG_6830; Taken on 02/19/20 at 11:16 hours by STARTJC. Facing W. Facing down slope toawrds Weir Ave. MR collects soil sample from parcel R13, BE collects GPS coordinates. R13, SS-08

2/19/2020
Photo No. IMG_6833; Taken on 02/19/20 at 11:21 hours by STARTJC. Facing Down. Looking down at the sample collection location. R13, SS-08

2/19/2020
Photo No. IMG_6834; Taken on 02/19/20 at 11:45 hours by STARTJC. Facing N. BE collects soil sample from property R05. R05, SS-09

2/19/2020
Photo No. IMG_6835; Taken on 02/19/20 at 11:46 hours by STARTJC. Facing Down. Looking down, BE collects sample, utilizing dedicated SS trowel and aluminum pan for homogenization. R05, SS-09

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6839; Taken on 02/19/20 at 12:05 hours by STARTJC. Facing NE. Facing Northeast on property R01, pin flag marks the sample location along a possible wildlife trail through the underbrush. R01, SS-10

2/19/2020
Photo No. IMG_6840; Taken on 02/19/20 at 12:06 hours by STARTJC. Facing W. Facing west on property R01, pin flag marks sample location, looking down towards Weir Ave. R01, SS-10.

2/19/2020
Photo No. IMG_6842; Taken on 02/19/20 at 12:18 hours by STARTJC. Facing N. Facing north, BE collects soils sample from property R06, MR collects GPS coordinates. Possible yard, due east from old foundation remains. R06, SS-11

2/19/2020
Photo No. IMG_6844; Taken on 02/19/20 at 12:19 hours by STARTJC. Facing SW. Facing southwest, BE utilizes dedicated SS trowel and aluminum pan to collect sample. R06, SS-11

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6847; Taken on 02/19/20 at 1:23 hours by STARTJC. Facing W. Looking down slope, towards Weir Ave. BE collects soil sample. Former BOP site is just beyond Weir Ave. part of foundation is visible in pic, R09, SS-12

2/19/2020
Photo No. IMG_6849; Taken on 02/19/20 at 1:24 hours by STARTJC. Facing E. BE collects soils from R09 property location, MR collects GPS coordinates. R09, SS-12

2/19/2020
Photo No. IMG_6852; Taken on 02/19/20 at 1:35 hours by STARTJC. Facing Down. MR collecting soils from vacant lot, utilizing SS trowel and aluminum pan for homogenization. R08, SS-13

2/19/2020
Photo No. IMG_6853; Taken on 02/19/20 at 1:35 hours by STARTJC. Facing N. MR collecting soils from vacant lot, utilizing SS trowel and aluminum pan for homogenization. R08, SS-13

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6856; Taken on 02/19/20 at 2:06 hours by STARTJC. Facing WSW. BE collects soils from CP01, MR collects GPS coordinates. CP01, SS-15

2/19/2020
Photo No. IMG_6859; Taken on 02/19/20 at 2:07 hours by STARTJC. Facing Down. BE collects soils using a dedicated SS trowel and aluminum pan for soil homogenization. CP01, SS-15

2/19/2020
Photo No. IMG_6861; Taken on 02/19/20 at 2:22 hours by STARTJC. Facing Down. MR collects soils using a dedicated SS trowel and aluminum pan for soil homogenization.CP03, SS-16

2/19/2020
Photo No. IMG_6862; Taken on 02/19/20 at 2:22 hours by STARTJC. Facing E. MR collects soils from CP03, BE collects GPS coordinates. CP03, SS-16

Weirton BOP Implosion Site Photolog for February 19, 2020

2/19/2020
Photo No. IMG_6864; Taken on 02/19/20 at 2:46 hours by STARTJC. Facing E. BE collects soils from CP09, MR collects GPS coordinates, background sample location. CP09, SS-17

2/19/2020
Photo No. IMG_6866; Taken on 02/19/20 at 2:47 hours by STARTJC. Facing Down. BE collects soils using a dedicated SS trowel and aluminum pan for homogenization. Background sample location. CP09, SS-17

2/19/2020
Photo No. IMG_6868; Taken on 02/19/20 at 3:08 hours by STARTJC. Facing WNW. MR collects soils from CP11 property, BE collects GPS coordinates. Background sample location. CP11, SS-18

2/19/2020
Photo No. IMG_6869; Taken on 02/19/20 at 3:08 hours by STARTJC. Facing Down. MR utilizing a dedicated SS trowel and aluminum pan for soil homogenization. Background sample location. CP11, SS-18

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2/19/2020
Photo No. IMG_6872; Taken on 02/19/20 at 3:31 hours by STARTJC. Facing NW. BE collects soils just north of a community basketball court located at the north end of Orchard Lane, background sampling location. CP10, SS-19

2/19/2020
Photo No. IMG_6873; Taken on 02/19/20 at 3:31 hours by STARTJC. Facing S. BE collects soils from CP10 property, background sampling location. CP10, SS-19