Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837-3703
Phone: 732-585-4400
www.westonsolutions.com

SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

December 23, 2020

Mr. Peter Lisichenko, On-Scene Coordinator
U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, NJ 08837

EPA CONTRACT NO: 68HE0319D0004
TD No: TO-0036-0019
DC No: STARTV-02-D-0038
SUBJECT: REMOVAL ASSESSMENT REPORT
789 UPPER MOUNTAIN ROAD SITE
LEWISTON, NIAGARA COUNTY, NEW YORK

Dear Mr. Lisichenko,

Enclosed please find the Removal Assessment Report which summarizes the Removal Assessment activities conducted by the U.S. Environmental Protection Agency, Region II (EPA) with the support of Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) at the 789 Upper Mountain Road Site (the Site) located in Lewiston, Niagara County, New York. The Removal Assessment activities were performed at the Site on July 22, 2020, August 10 through 13, 2020 and August 25 through 26, 2020.

If you have any questions or comments, please contact me at (732) 585-4413.

Sincerely,

WESTON SOLUTIONS, INC.

Bernard Nwosu
START V Site Project Manager

Enclosure
cc: TDD File: TO-0036-0019

REMOVAL ASSESSMENT REPORT

789 UPPER MOUNTAIN ROAD SITE

Lewiston, Niagara County, New York

Site Code: A29X
CERCLIS Code: NYN000203537

Prepared by:

Superfund Technical Assessment & Response Team V
Weston Solutions, Inc.
Federal East Division
Edison, New Jersey 08837

Prepared for:

U.S. Environmental Protection Agency, Region II
Superfund and Emergency Management Division
2890 Woodbridge Avenue
Edison, New Jersey 08837

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December 2020

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1.0 Introduction

On July 22, 2020, August 10 through 13, 2020 and August 25 through 26, 2020, the U.S. Environmental Protection Agency, Region II (EPA) Superfund and Emergency Management Division (SEMD) and Weston Solutions Inc., Superfund Technical Assessment & Response Team V (START V) performed a Removal Assessment of the 789 Upper Mountain Road Site (the Site). As part of Removal Assessment activities, radiological surveys and scans were conducted within the one residence located on the property and exterior areas of the Site; air monitoring for radon and air sampling for laboratory radon analysis were conducted in the residence; and test pits were advanced at locations throughout the Site from which soil samples were collected for laboratory analysis and waste disposal characterization. Radiological surveys and gamma scans were conducted to identify hot spots within the residence and exterior areas of the Site. Radon monitoring and sampling were conducted to ascertain the concentration of radon in the residence and determine remedial options. Test pits were advanced to investigate all identified hot spots, verify the presence of any radiation sources buried subsurface, and determine the vertical and horizontal extents of radiological contamination at the Site.

1.1 Site Location and Description

The Site, located at 789 Upper Mountain Road, Lewiston, Niagara County, New York (Parcel ID: 115.08-1-13), is a 0.46-acre residential property with a 1,584 square-foot split level home. Geographical coordinates are latitude 43.156180 and longitude -79.018420. The Site is bordered to the south by Upper Mountain Road and residential properties, to the east and west by residential properties, and to the north by a wooded area.

Refer to Attachment A, Figure 1: Site Location Map

1.2 Site History and Background

The Site was listed in the 1986 Oak Ridge Laboratory report as Anomaly #42 with radioactive activity reported at 29 to 130 microroentgens per hour (µR/hr). The Site was determined to be ineligible for cleanup under the Formerly Utilized Site Remediation Action Program (FUSRAP). In October 2019, representatives of the property owner conducted a radiological scan of the Site and identified elevated radiological activity throughout the property including underneath the residence. The October 2019 survey reported gamma readings of 500 µR/hr at surface contact beneath the residence.

2.0 Scope of Work

As part of the scope of work for the Removal Assessment at the Site, START V was tasked by EPA with providing support for: procuring a National Radon Safety Board (NRSB)-certified Company to perform air monitoring for radon and air sampling for laboratory radon analysis; conducting radiological surveys and scans within the on-site residence and exterior areas of the Site; advancing test pits throughout the Site for waste disposal characterization and soil sampling for laboratory radiochemistry including gamma spectroscopy, radium-226 (Ra-226) homogenized for 21 day ingrowth, alpha spectroscopy, and isotopic thorium and uranium via Inductively-Coupled Plasma-Mass Spectroscopy (ICP-MS), target analyte list (TAL) volatile organic compounds (VOCs), percent (%) moisture, TAL semivolatile organic compounds (SVOCs), TAL

pesticides, TAL polychlorinated biphenyls (PCBs), TAL metals including mercury, cyanide, herbicides, toxicity characteristic leaching procedure (TCLP) VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, and Resource Conservation and Recovery Act (RCRA) characteristics, analyses. In addition, START V was also tasked with documenting significant observations and all Site activities in the Site logbook and with digital photographs, entering all sampling information into the Site-Specific SCRIBE database, and documenting sample locations with Global Positioning System (GPS) technology.

3.0 On-Site Personnel

Name	Affiliation	Duties On-site
Peter Lisichenko	EPA, Region II	On-Scene Coordinator
Bernard Nwosu	Weston Solutions Inc., START V, Region II	Site Project Manager, Site Health and Safety, Sample Collection, QA/QC, GPS, and Sample Management
Stephany Benitez	Weston Solutions Inc., START V, Region II	Sample Collection, QA/QC, and Sample Management

EPA: U.S. Environmental Protection Agency
QA/QC: Quality Control/Quality Assurance
GPS: Global Positioning System
START V: Superfund Technical Assessment and Response Team V

4.0 Site Activities and Observations

On July 22, 2020, EPA On-Scene Coordinator (OSC) performed grided gamma scans inside the one residence located on-site and performed mobile radiological survey of exterior areas of the Site. Gamma scans were performed using a Ludlum-2241 connected to a 3x3 sodium iodide (NaI) scintillator setup. Gamma survey was performed by connecting the Ludlum-2241 and 3x3 NaI scintillator setup to a GPS and EPA's VIPER system (a wireless network-based communication system) to provide instantaneous, geographically referenced gamma readings through a computer server [Viper Deployment Manager (VDM)]. Background gamma readings inside the residence were in the range of 12-20 µR/hr. On the ground floor of the residence, elevated gamma readings significantly above background were observed, and one hot spot was identified. On the first floor of the residence, gamma readings were not significantly higher than background. Exterior background gamma readings were in the range of 7-25 µR/hr. Based on exterior background readings, a total of seven hot spots were identified, two in front of the residence (southern portion of the property), and five behind the residence (northern portion of the property). A hand shovel was utilized to advance a hole at one of the hots pots located behind the residence, approximately center of the property, to a depth of 12 inches below ground surface (bgs.), and gamma reading was 1,500 µR/hr.

On August 10, 2020, under oversight of the EPA OSC, personnel from START V-procured, NRSB-certified Company, Accu-View Property Inspections (Accu-View), deployed two continuous radon monitors (CRMs), one in the basement and one on the first floor of the on-site residence, for real-time data collection, and a total of 11 charcoal canisters were deployed in frequently occupied living spaces throughout the residence.

On August 11, 2020, START V personnel and EPA OSC performed test pit soil sampling at the Site. Prior to mobilizing to the Site, START V contacted Dig Safely New York and requested a mark-out of all existing underground public utilities at the Site. Marked utility lines and flags were observed upon arrival at the Site. Utilizing a mini excavator, a total of four test pits (789UMR-

TP01 through 789UMR- TP04) were advanced in exterior areas of the Site. Background test pit was 789UMR- TP01. The depths of the test pits varied by location depending on the depth at which the native clay layer was encountered. Slag was not observed in any test pits; however, lithology was generally brown silty fine sand, some subangular gravels transitioning to fill material. Fragments of refractory bricks were observed in various degrees in 789UMR- TP02 through 789UMR-TP04. Fragments of refractory sewer pipe with elevated gamma readings were observed in 789UMR-TP03. Terracotta fragments, white noodles, and soil with glass-like shimmer in sunlight were observed in 789UMR-TP04. The mini excavator utilized for advancing the test pits was decontaminated on-site at 789UMR-TP04, and wipe sample were collected from the excavator bucket and cabin for analysis. The wipe samples were analyzed by the EPA OSC using Ludlum-3030, and it was determined that radionuclide contamination was not detected. A total of 16 soil samples comprising 15 grab soil samples, including one field duplicate, and one composite soil sample, were collected from the test pits. All Site activities and significant observations were noted in the Site logbook and documented with digital photographs. Test pit locations were documented using GPS technology.

On August 12, 2020, EPA OSC and START V personnel completed a grided gamma scan of the rear deck using Ludlum-2241 and 3x3 NaI scintillator, and hot spots were identified in areas of the deck. The exterior north concrete block wall and east brick wall of the residence were scanned using a hand-held fluke photoionization chamber (FPIC) (Model 451B, Serial Number [S/N]: 2093) and gamma readings were normal, within background levels. All 16 soil samples, including quality assurance/quality control (QA/QC) samples, were shipped to the assigned laboratory for radiochemistry analysis.

On August 13, 2020, under oversight of the EPA OSC, personnel from Accu-View completed the radon monitoring and sampling activities that were initiated in the residence on August 10, 2020. The three CRMs and all 11 charcoal canister samples, including one field duplicate, one field blank, one office blank, and one blank, were picked up from the residence. The charcoal canister samples were shipped same day by Accu-View to Radon Testing Corporation of America (RTCA), for radon analysis.

Prior to mobilizing to the Site for additional Removal Assessment sampling activities, Dig Safely New York was contacted to mark-out all existing underground public utilities at the Site. On August 24, 2020, under EPA oversight, personnel from START V subcontractor, Ravi Engineering & Land Surveying, utilized ground penetrating radar (GPR) to conduct private utilities mark out throughout the Site, and specifically around all proposed, pre-marked test pit sampling locations.

On August 25 through 26, 2020, EPA and START V conducted test pit soil sampling at the Site. Marked utility lines and flags were observed upon arrival at the Site. START V subcontractor, Ravi Engineering & Land Surveying, completed a land survey of the property to determine elevations throughout the Site in view of potential future removal operations. Utilizing a mini excavator, a total of nine test pits (789UMR-TP05 through 789UMR-TP11, 789UMR-TP13, and 789UMR-TP14) were advanced in exterior areas of the Site and utilizing dedicated plastic scoops based on sampling depth intervals, one soil boring (789UMR-TP12) was advanced in the dirt crawl space within the residence. The depths of the exterior test pits varied by location depending on the depth at which the native clay layer was encountered. Slag was not observed in any test pit; however, lithology was generally brown silty fine sand, fine, medium, and coarse gravels, and trace angular cobbles. Lenticula bands of white material, miscellaneous debris, including

refractory bricks, sewer pipe and terracotta fragments, and several 10-inch blocks were observed in 789UMR-TP05. A total of 42 grab soil samples, including two field duplicates, and three composite soil samples, including one field duplicate, were collected from eight of the nine test pits and the one soil boring. For the one test pit that was not sampled, 789UMR-TP14, only visually documentation of subsurface lithology was performed. The mini excavator utilized for advancing the test pits was decontaminated on-site at 789UMR-TP05, and wipe sample were collected from the excavator bucket and cabin for analysis. The wipe samples were analyzed by the EPA OSC using Ludlum-3030, and it was determined that radionuclide contamination was not detected. All Site activities and significant observations were noted in the Site logbook and documented with digital photographs. Test pit locations were documented using GPS technology.

All the soil samples selected for TAL VOCs, percent moisture, and TCLP VOCs, analyses were shipped daily to the assigned laboratory. All the soil samples selected for other analyses, including radiochemistry, TAL SVOCs, TAL pesticides, TAL PCBs, TAL metals including mercury, cyanide, herbicides, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, and RCRA characteristics, were shipped to the assigned laboratory on August 27, 2020.

Refer to Attachment A, Figure 2: Property Gamma Scan, Figure 3A: Ground Level Gamma Scan, Figure 3B: First Floor Gamma Scan, Figure 4: Rear Deck Gamma Scan, Figure 5: Test Pit Locations, Attachment B, Table 1A: Sample Collection and Validated Analytical Results - Radon Summary Table and Table 1B: Test Pit Log and Sample Collection Summary Table, and Attachment D: Photographic Documentation log.

5.0 Gamma Survey and Scan Methodology

The gamma survey instrumentation setup comprised of a Ludlum-2241 (S/N: 198269) connected via data cable to a 3x3 NaI scintillator (Model: 44-20 [S/N: PR330005]). A Life-line Interoperable Network Communicator (LINC) was attached and connected to the Ludlum-2241. A baby buggy stroller was utilized to provide mobility for the entire survey instrumentation setup. The 3x3 NaI scintillator was positioned in the buggy approximately 6 inches above the ground surface. A Trimble® GPS unit, laptop computer, and Gateway (internet source) were also placed in the buggy. The LINC, GPS unit, and laptop computer were connected to the internet via the Gateway. The gamma readings generated by the Ludlum-2241 and 3x3 NaI scintillator setup were transmitted through the LINC via the Gateway to EPA's VIPER system, and the data was stored on a computer server (Viper Deployment Manager [VDM]). The GPS unit provided geographical reference of the gamma readings by transmitting the locational data of the Ludlum-2241 and 3x3 NaI scintillator setup to VDM. The instantaneous gamma readings, as well as the geographical locations, were viewed on VDM via the laptop computer. With this mobile setup, exterior areas of the Site were surveyed, and hot spots identified.

Gamma scans were conducted on the ground level (basement and crawl space) and first floor of the residence using the same Ludlum-2241 and 3x3 NaI scintillator setup, but without VIPER accessories and connectivity. Gamma reading were manually collected in a somewhat gridded pattern. At each grid location, the 3x3 NaI scintillator was held approximately 6-inches above the ground for at least 60 seconds and gamma reading from the Ludlum-2241 was recorded in a Microsoft Excel® spreadsheet. The gamma data entered in the Excel spreadsheet was later mapped for visual reference, and hot spots were identified in the residence.

Gamma scans were also conducted on the exterior north concrete block wall and east brick wall of the residence using FPIC. Gamma readings were collected in a somewhat gridded pattern. At each grid location, the FPIC was held approximately 3-inches from the wall for at least 60 seconds and gamma reading was recorded in a Microsoft Excel® spreadsheet. Since gamma readings were normal, within background levels, the data was not mapped for visual reference.

6.0 Monitoring and Sampling Methodology

All field sampling activities were performed in compliance with EPA's Environmental Response Team (ERT)/Scientific, Engineering, Response & Analytical Services (SERAS) contractor's Standard Operating Procedure (SOP) Number (No.) 2001: *General Field Sampling Guidelines*.

Radon Monitoring: Radon monitoring was performed in accordance with the guidelines presented in the American National Standards Institute (ANSI)/American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings* (MAMF 2012). Two CRMs (Model: Radalink AirCat Continuous Blind Radon Monitor, S/Ns: 1510 and 2012) were deployed in the residence by Accu-View. One CRM (S/N: 1510) was deployed in the basement and one CRM (S/N: 2012) was deployed on the first floor. CRMs use an electronic detector to accumulate and store information related to the periodic average concentration of radon gas or radon decay products. Once activated, the monitors ran for approximately 72 hours and collected and stored real-time data, including radon concentrations and weather information comprising temperature, humidity, wind speed and direction, and barometric pressure.

Radon Sampling: Accu-View provided field support for identifying radon canister placement locations in living spaces of the residence, placing the canisters, picking up the canisters, and delivering to the assigned laboratory for radon analysis. Passive activated charcoal canisters were utilized to conduct short-term radon sampling tests that lasted approximately 72 hours. Canister placement was conducted in accordance with the guidelines presented in ANSI/AARST MAMF 2012 and as directed by the OSC. Radon testing locations were focused on frequently occupied spaces in the building. Bathrooms, kitchens, utility closets, and hallways were not tested to avoid biased results. The canisters were raised no less than approximately 20 inches above the ground, and where possible, away from draft and vents. The samples were collected for definitive data and QA/QC objective.

Soil sampling: Soil sampling was conducted in accordance with EPA's ERT/SERAS contractor's SOP No. 2012: *Soil Sampling* and protocols contained in EPA's *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM). Prior to mobilizing to the Site, START V contacted Dig Safely New York and requested a mark-out of all subsurface public utilities located within the Site. Based on radiological survey, identified hot spots selected for test pit soil sampling were marked out. Utilizing GPR, private subsurface utilities were identified and marked out by START V subcontractor throughout the Site, and specifically around all proposed, pre-marked test pit sampling locations. The surface gamma reading at each selected test pit location was collected using the Ludlum-2241 and 3x3 NaI scintillator setup and documented. Utilizing a mini excavator, test pits were advanced at 6-inch intervals bgs. to depths up to native soil at the selected test pit soil sampling locations throughout the Site. Soil sample was collected directly from the excavator bucket, generally at each 6-inch interval bgs., using dedicated plastic scoop and placed into a resealable plastic bag for homogenization. In some instances, based on visual observation of the

test pit and OSC's discretion, soil sample was collected at specific depth intervals, including composite samples. Each bagged soil sample was scanned on-site at the background location using the Ludlum-2241 and 3x3 NaI scintillator setup, and gamma reading recorded. Thereafter, soil samples selected for TAL VOCs, TCLP VOCs, and percent moisture, analyses were collected first from the bagged soil using Encore™ sampling devices and 4-ounce (oz.) glass sample jar. Subsequently, soil samples were transferred from the bagged soil using dedicated plastic scoop into 16 oz. glass sample jars for radiochemistry analysis and 8 oz. glass sample jars for all other analytical parameters. The test pits were backfilled with the excavated soil after sampling and tamped down. For QA/QC purposes, field duplicate and additional sample volumes designated as matrix spike/matrix spike duplicate (MS/MSD) were collected at a frequency of one per 20 field samples. Fresh nitrile gloves were donned between sampling locations and depth intervals. The soil samples were collected for definitive data and QA/QC objective. All sample information was entered in the Site-Specific SCRIBE database from which chain of custody (COC) record and sample labels were generated. The sample labels were affixed to the sample jars which were preserved on ice in coolers to maintain a temperature of 4 Degrees Celsius (ºC).

7.0 Laboratories Receiving Samples

The following laboratories were utilized for sample analyses during the August 2020 test pit soil sampling events.

Laboratory Name/Location	Sample Type	Analysis
Eurofins TestAmerica Laboratories, Inc. 13715 Rider Trail North Earth City, MO 63045	Soil	<u>Gamma spectroscopy</u> Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 days ingrowth. <u>Alpha spectroscopy</u> U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. <u>Isotopic Uranium/Thorium (ICP-MS)</u> U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228.
Chemtech Consulting Group 284 Sheffield St #1 Mountainside, NJ 07092	Soil	TAL VOCs, SVOCS, Pesticides, PCBs, Metals + Hg + CN, and Herbicides TCLP VOCs, SVOCs, Pesticides, Herbicides, TCLP Metal + Hg, and RCRA Characteristics

TAL: Target Analyte List
TCLP: Toxicity Characteristic Leaching Procedure
RCRA: Resource Conservation and Recovery Act
ICP-MS: Inductively Coupled Plasma-Mass Spectroscopy
SVOCs: Semivolatile Organic Compounds
VOCs: Volatile Organic Compounds
PCBs: Polychlorinated Biphenyls

8.0 Sample Dispatch

On August 12, 2020, a total of 16 soil samples, comprising 14 grab soil samples, one field duplicate, and one composite soils sample, and additional sample volumes of one field sample designated as MS/MSD, were shipped under COC Record No. 2-081120-0036-0019-01 via FedEx

Airbill No. 7712-3676-1617 to Eurofins TestAmerica Laboratories (TestAmerica) located in Earth City, Missouri for radiochemistry analyses, including gamma spectroscopy, Ra-226 homogenized for 21 day ingrowth, alpha spectroscopy, and isotopic thorium and uranium via ICP-MS.

On August 26, 2020, a total of grab six soil samples, including one field duplicate, and additional sample volumes of one field sample designated as MS/MSD, for TAL VOCs and percent moisture, analyses and two composite soil samples, including one field duplicate, and additional sample volumes of one field sample designated as MS/MSD, for TCLP VOCs analysis were shipped under COC Record No. 2-082520-0036-0019-01 via FedEx Airbill No. 7713-5827-0902 to Chemtech Consulting Group (Chemtech) located in Mountainside, New Jersey. In addition, on the same day, a total of seven grab soil samples for TAL VOCs and percent moisture, analyses and one composite soil sample for TCLP VOCs analysis were shipped under COC Record No. 2-082520-0036-0019-02 via FedEx Airbill No. 7713-6910-1550 to Chemtech located in Mountainside, New Jersey.

On August 27, 2020, a total of 13 grab soil samples, including one field duplicate, and additional sample volumes of one field sample designated as MS/MSD, for TAL SVOCs, TAL pesticides, PCBs, herbicides, and TAL metals including mercury, and cyanide, analyses and three composite soil samples, including one field duplicate, and additional sample volumes of one field sample designated as MS/MSD, for TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, and RCRA characteristics, analyses were shipped under COC Record No. 2-082720-0036-0019-02 via FedEx Airbill No. 7713-7369-3249 to Chemtech. In addition, on the same day, a total of 42 grab soil samples, including two field duplicates, additional sample volumes of one field sample designated as MS/MSD, were shipped under COC Record No. 2-082720-0036-0019-01 via FedEx Airbill No. 7712-7358-2363 to TestAmerica located in Earth City, Missouri for radiochemistry analysis, including gamma spectroscopy, Ra-226 homogenized for 21-day ingrowth, alpha spectroscopy, and isotopic thorium and uranium via ICP-MS.

Refer to Attachment B, Test Pit Log and Sample Collection Summary Table and Attachment D: Chains of Custody Record.

9.0 Radon Monitoring Results

Based on radon monitoring result (Test No. 2012-290) generated by the CRM (S/N: 2012) that was deployed on the first floor, radon concentrations on the first floor, for the approximately 72-hour monitor run time, were generally below the EPA Action Level of 4.0 picocuries per liter (pCi/L). However, after approximately 40 and 43 hours monitor run time, the CRM on the first floor indicated an unsustained spike in radon concentration above 4.0 pCi/L.

Based on radon monitoring result (Test No. 1510-163) generated by the CRM (1510) that was deployed in the basement (ground level), radon concentrations on the ground level, for the approximately 72-hour monitor run time, significantly exceeded the EPA Action Level of 4.0 pCi/L. Concentrations of radon on the ground level exceeded 4.0 pCi/L after approximately 8 hours monitor run time and thereafter for the entire monitoring period. The highest radon concentration of approximately 13 pCi/L occurred after approximately 42-hour monitor run time.

Refer to Attachment E: Data Validation Report.

10.0 Radiological Survey and Scan Results

Based on exterior radiological survey results, background gamma readings ranged from 7-25 µR/hr. Seven exterior locations were identified as hot spots with elevated gamma readings ranging from 210 µR/hr near the driveway to 611 µR/hr along the west fence line of the property boundary. At a depth of 12 inches bgs., one hot spot located behind the residence, approximately center of the property, had a gamma reading was 1,500 µR/hr. Based on exterior radiological survey results, test pits were advanced in 12 locations on-site, 11 of which were sampled, and the remaining one test pit was investigated for documentation purposes only. Surface gamma readings collected from the test pit locations prior to excavation ranged from background (789UMR-TP01) to 807 µR/hr (789UMR-TP11).

Refer to Attachment A, Figure 2: Property Gamma Scan.

Based on radiological scans of the interior residence, background gamma readings ranged from 12-20 µR/hr. Gamma readings collected on the first floor of the residence generally ranged from background to less than 2 times (2x) background. On the ground level of the residence, gamma readings generally ranged from background to more than 3x background. The elevated gamma readings were concentrated around a hot spot located within the basement dirt crawl space, where gamma reading was 620 µR/hr.

Based on exterior radiological scans of the rear building deck, background gamma readings ranged from 12-20 µR/hr. Gamma readings collected from the rear deck generally ranged from less than 2x background to 134 µR/hr. The northeast portion of the deck had the highest gamma reading, perhaps due to proximity to the hot spot identified on the exterior ground surface adjacent to the rear deck.

Refer to Attachment A, Figure 3A: Ground Level Gamma Scan, Figure 3B: First Floor Gamma Scan, and Figure 4: Rear Deck Gamma Scan

11.0 Analytical Results

A total of 11 charcoal canister samples, including one field duplicate, one field blank, one office blank, and one blank, were collected from the on-site residence. Validated analytical results were compared against the EPA Action Level of 4.0 pCi/L for radon. Based on validated analytical results of the charcoal canister samples collected on the first floor of the residence, radon concentrations were below 4.0 pCi/L. Based on validated analytical results of the charcoal canister samples collected on the ground level of the residence, radon concentrations were in exceedance of 4.0 pCi/L. Radon concentration was 7.0 pCi/L in charcoal canister sample collected from the basement. Radon concentration was 11 pCi/L and 10.9 pCi/L, respectively in sample and field duplicate, collected from the crawl space located on the ground level.

Refer to Attachment B, Table 1A: Sample Collection and Validated Analytical Results - Radon Summary Table and Attachment E: Data Validation Report.

A total of 13 grab soil samples, including one field duplicate, were collected at various depth intervals from select test pits and the one soil boring located throughout the Site and analyzed for TAL VOCs, TAL SVOCs, TAL pesticides, PCBs, herbicides, and TAL metals including mercury,

and cyanide. Validated analytical results were compared against EPA Removal Management Levels (RMLs) for Residential Soil, November 2020, and New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCO), May 2010. Based on validated analytical results, concentrations of TAL VOCs, TAL SVOCs, TAL pesticides, PCBs, and herbicides, were either not detected or below the EPA RMLs and NYSDEC RUSCOs. Except for barium, mercury, and thallium, concentrations of all other TAL metals and cyanide were either not detected or below the EPA RMLs and NYSDEC RUSCOs.

Concentrations of barium exceeded the NYSDEC RUSCO of 350 milligrams per kilogram (mg/kg) in two soil samples, 789UMR-TP05-0612-01 and 789UMR-TP05-1218-01, collected from 789UMR-TP05 at depths 6-12 and 12-18 inches bgs., respectively. Concentrations of mercury exceeded the NYSDEC RUSCO of 0.73 mg/kg in one soil sample, 789UMR-TP05-3036-01, collected from 789UMR-TP05 at depths 30-36 inches bgs. Concentrations of thallium exceeded the EPA RML of 0.78 mg/kg in three soil samples, 789UMR-TP06-0006-01, 789UMR-TP07-1218-01, and 789UMR-TP08-1824-01, collected from 789UMR-TP06, 789UMR-TP07, and 789UMR-TP08, respectively at depths 0-6, 12-18, and 18-24 inches bgs., respectively.

A total of three composite soil samples, including one field duplicate, were collected at various depth intervals from select test pits and the one soil boring located throughout the Site and analyzed for TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, and RCRA characteristics. Validated analytical results were compared against the EPA Maximum Concentration of Contaminants (MCCs) for toxicity characteristic as determined by TCLP, October 2009. Based on validated analytical results, concentrations of target analytes were either not detected or below the EPA MCCs. The pH of the soil samples was slightly basic, and ranged from 8.4 J (estimated result) to 8.61 J.

A total of 58 soil samples, including three field duplicates, were collected at various depth intervals from 12 test pits and the one soil boring located throughout the Site for radiochemistry analysis. Validated analytical results were compared against the Site-Specific Action Levels (SSALs). Based on validated analytical results, concentrations of the following target radionuclides, including uranium-233/234 (U-233/234), uranium-238 (U-238), actinium-288 (Ac-228), bismuth-212 (Bi-212), lead-212 (Pb-212), Ra-226, Ra-228, and thallium-208 (Tl-208), exceeded their respective SSALs in 35 of the 58 soil samples, including two field duplicates.

Concentrations of U-233/234 exceeded the EPA SSAL of 5.18 pCi/g in 35 soil samples. Exceedance concentrations of U-233/234 ranged from 6.3 pCi/g (789UMR-TP02-1824-01) to 70 pCi/g (789UMR-TP12-0002-01). Concentrations of U-238 exceeded the EPA SSAL of 5.18 pCi/g in 35 soil samples. Exceedance concentrations of U-238 ranged from 6.34 pCi/g (789UMR-TP02-1824-01) to 70.5 pCi/g (789UMR-TP12-0002-01). Concentrations of Ac-228 exceeded the EPA SSAL of 5.01 pCi/g in 43 soil samples. Exceedance concentrations of Ac-228 ranged from 6.06 pCi/g (789UMR-TP08-0612-01) to 518 pCi/g (789UMR-TP12-0002-01). Concentrations of Bi-212 exceeded the EPA SSAL of 5.01 pCi/g in 47 soil samples. Exceedance concentrations of Bi-212 ranged from 6.02 pCi/g (789UMR-TP08-0612-01) to 519 pCi/g (789UMR-TP12-0002-01). Concentrations of Pb-212 exceeded the EPA SSAL of 5.01 pCi/g in 45 soil samples. Exceedance concentrations of Pb-212 ranged from 5.57 pCi/g (789UMR-TP08-0006-01) to 557 pCi/g (789UMR-TP04-1824-01). Concentrations of Ra-226 exceeded the EPA SSAL of 5.18 pCi/g in 37 soil samples. Exceedance concentrations of Ra-226 ranged from 10.1 pCi/g (789UMR-TP07-0006-01) to 107 pCi/g (789UMR-TP12-0002-01). Concentrations of Ra-228 exceeded the EPA

SSAL of 5.01 pCi/g in 43 soil samples. Exceedance concentrations of Ra-228 ranged from 6.06 pCi/g (789UMR-TP08-0612-01) to 518 pCi/g (789UMR-TP12-0002-01). Concentrations of Tl-208 exceeded the EPA SSAL of 5.01 pCi/g in 39 soil samples. Exceedance concentrations of Tl-208 ranged from Thallium-208 exceedances ranged from 5.02 pCi/g (789UMR-TP07-1218-01) to 184 pCi/g (789UMR-TP12-0002-01).

Additionally, concentrations of thorium-234 exceeded the EPA SSAL of 5.18 pCi/g in three soil samples (789UMR-TP02-0006-01, 789UMR-TP02-0006-01, and 789UMR-TP04-2430-01). Exceedance concentrations ranged from 9.1 pCi/g (789UMR-TP02-0006-01) to 53.4 pCi/g (789UMR-TP04-2430-01). Generally, at least one or more target radionuclides exceeded their respective SSALs in 47 of the 58 soil samples, including two field duplicates.

Refer to Attachment A, Figure 5: Test Pit Locations, Attachment B, Table 1B: Test Pit Log and Sample Collection Summary Table, Table 2: Validated Analytical Results - TAL VOCs Summary Table, Table 3: Validated Analytical Results - TAL SVOCs Summary Table, Table 4: Validated Analytical Results - TAL PCBs Summary Table, Table 5: Validated Analytical Results - TAL Pesticides Summary Table, Table 6: Validated Analytical Results - Herbicides Summary Table, Table 7: Validated Analytical Results - TAL Metals Summary Table, Table 8: Validated Analytical Results - TCLP and RCRA Characteristics Summary Table, Table 9: Validated Analytical Results - Radiochemistry Summary Table, and Attachment E: Data Validation Report.

12.0 Conclusion

On July 22, 2020, August 10 through 13, 2020 and August 25 through 26, 2020, EPA and START V performed a Removal Assessment of the Site. As part of Site activities, radiological surveys and scans were conducted within the one residence located on the property and exterior areas of the Site; air monitoring for radon and air sampling for laboratory radon analysis were conducted in the residence; and test pits were advanced at locations throughout the Site from which soil samples were collected for laboratory analysis and waste disposal characterization.

Based on exterior radiological survey results, background gamma readings ranged from 7-25 µR/hr. Seven exterior locations were identified as hot spots with elevated gamma readings ranging from 210 µR/hr near the driveway to 611 µR/hr along the west fence line of the property boundary. At a depth of 12 inches bgs., one hot spot located behind the residence, approximately center of the property, had a gamma reading of 1,500 µR/hr. Based on radiological scans of the interior residence, background gamma readings ranged from 12-20 µR/hr. Gamma readings collected on the first floor of the residence generally ranged from background to less than 2x background. On the ground level of the residence, gamma readings generally ranged from background to more than 3x background. The elevated gamma readings were concentrated around a hot spot located within the basement dirt crawl space, where gamma reading was 620 µR/hr. Gamma readings collected from the rear deck generally ranged from less than 2x background to 134 µR/hr. The northeast portion of the deck had the highest gamma reading, perhaps due to proximity to the hot spot identified on the exterior ground surface adjacent to the rear deck.

Based on radon monitoring results, radon concentrations on the first floor for the approximately 72-hour monitor run time were generally below the EPA Action Level of 4.0 pCi/L and radon concentrations on the ground level significantly exceeded the EPA Action Level of 4.0 pCi/L, with concentrations reaching up to 13 pCi/L within 42-hour monitor run time.

A total of 11 charcoal canister samples, including one field duplicate, one field blank, one office blank, and one blank, were collected from the on-site residence. Analytical results were compared against the EPA Action Level of 4.0 pCi/L for radon. Based on analytical results of the charcoal canister samples collected on the first floor of the residence, radon concentrations were below 4.0 pCi/L. Based on analytical results of the charcoal canister samples collected on the ground level of the residence, radon concentrations were in exceedance of 4.0 pCi/L. Radon concentration was 7.0 pCi/L in charcoal canister sample collected from the basement. Radon concentration was 11 pCi/L and 10.9 pCi/L, respectively in sample and field duplicate, collected from the crawl space located on the ground level.

A total of 13 grab soil samples, including one field duplicate, were collected from at various depth intervals from select test pits and the one soil boring located throughout the Site and analyzed for TAL VOCs, TAL SVOCs, TAL pesticides, PCBs, herbicides, and TAL metals including mercury, and cyanide. Analytical results were compared against EPA RMLs for Residential Soil, November 2020 and NYSDEC RUSCO, May 2010. Based on analytical results, concentrations of TAL VOCs, TAL SVOCs, TAL pesticides, PCBs, and herbicides were either not detected or below the EPA RMLs and NYSDEC RUSCOs. Except for barium, mercury, and thallium, concentrations of all other TAL metals and cyanide were either not detected or below the EPA RMLs and NYSDEC RUSCOs. Concentrations of barium exceeded the NYSDEC RUSCO of 350 mg/kg in two soil samples collected from 789UMR-TP05 at depths 6-12 and 12-18 inches bgs., respectively. Concentrations of mercury exceeded the NYSDEC RUSCO of 0.73 mg/kg in one soil sample collected from 789UMR-TP05 at depths 30-36 inches bgs. Concentrations of thallium exceeded the EPA RML of 0.78 mg/kg in three soil samples, collected from 789UMR-TP06, 789UMR-TP07, and 789UMR-TP08, respectively at depths 0-6, 12-18, and 18-24 inches bgs., respectively.

A total of three composite soil samples, including one field duplicate, were collected at various depth intervals from select test pits and the one soil boring located throughout the Site and analyzed for TCLP VOCs, TCLP SVOCs, TCLP pesticides, TCLP herbicides, TCLP metals including mercury, and RCRA characteristics. Analytical results were compared against the EPA MCCs for toxicity characteristic as determined by TCLP, October 2009. Based on analytical results, concentrations of target analytes were either not detected or below the EPA MCCs. The pH of the soil samples was slightly basic, ranging from 8.4 J - 8.61 J.

A total of 58 soil samples, including three field duplicates, were collected at various depth intervals from 12 test pits and the one soil boring located throughout the Site for radiochemistry analysis. Analytical results were compared against the SSALs. Based analytical results, concentrations of the following target radionuclides, including U-233/234, U-238, Ac-228, Bi-212, Pb-212, Ra-226, Ra-228, and Tl-208, exceeded their respective SSALs in 35 of the 58 soil samples, including two field duplicates. Additionally, concentrations of thorium-234 exceeded the EPA SSAL in three soil samples. Generally, at least one or more target radionuclides exceeded their respective SSALs in 47 of the 58 soil samples, including two field duplicates.

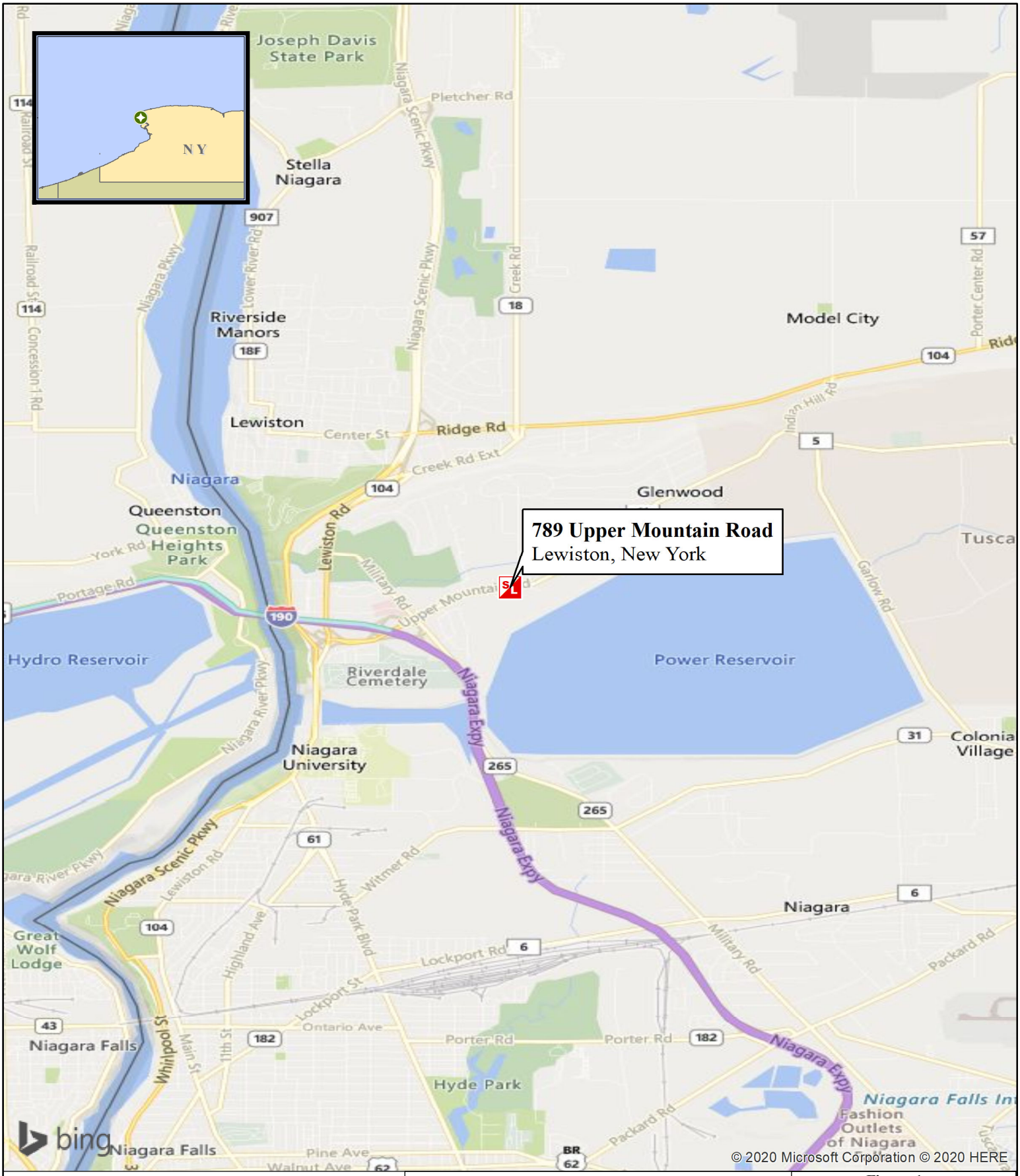
The radiological survey and analytical results from the Removal Assessment events conducted at the Site identified elevated gamma levels and concentrations of radon and target radionuclides in exceedance of the EPA Site-Specific Action Levels. This information indicates that a release of hazardous substances has occurred at the Site, which presents a threat to public health. Based on the information presented herein, urgent mitigation efforts, including a Removal Action, may be necessary to address the radionuclide contamination found to be present at the Site.

Report prepared by: _____ 12/23/2020
Stephany Benitez Date
START V

Report reviewed by: _____ 12/23/2020
Bernard Nwosu Date
START V Group Leader

ATTACHMENT A

Figures



Legend

Site Location

N

0 0.325 0.65 1.3 1.95 2.6 Miles

Weston Solutions, Inc.
Federal East Division

In Association With
Eco-Risk; Avatar Environmental, LLC;
Pro-West & Associates, Inc.;
On-Site Environmental, Inc.;
and Sovereign Consulting, Inc.

Figure 1:
Site Location Map

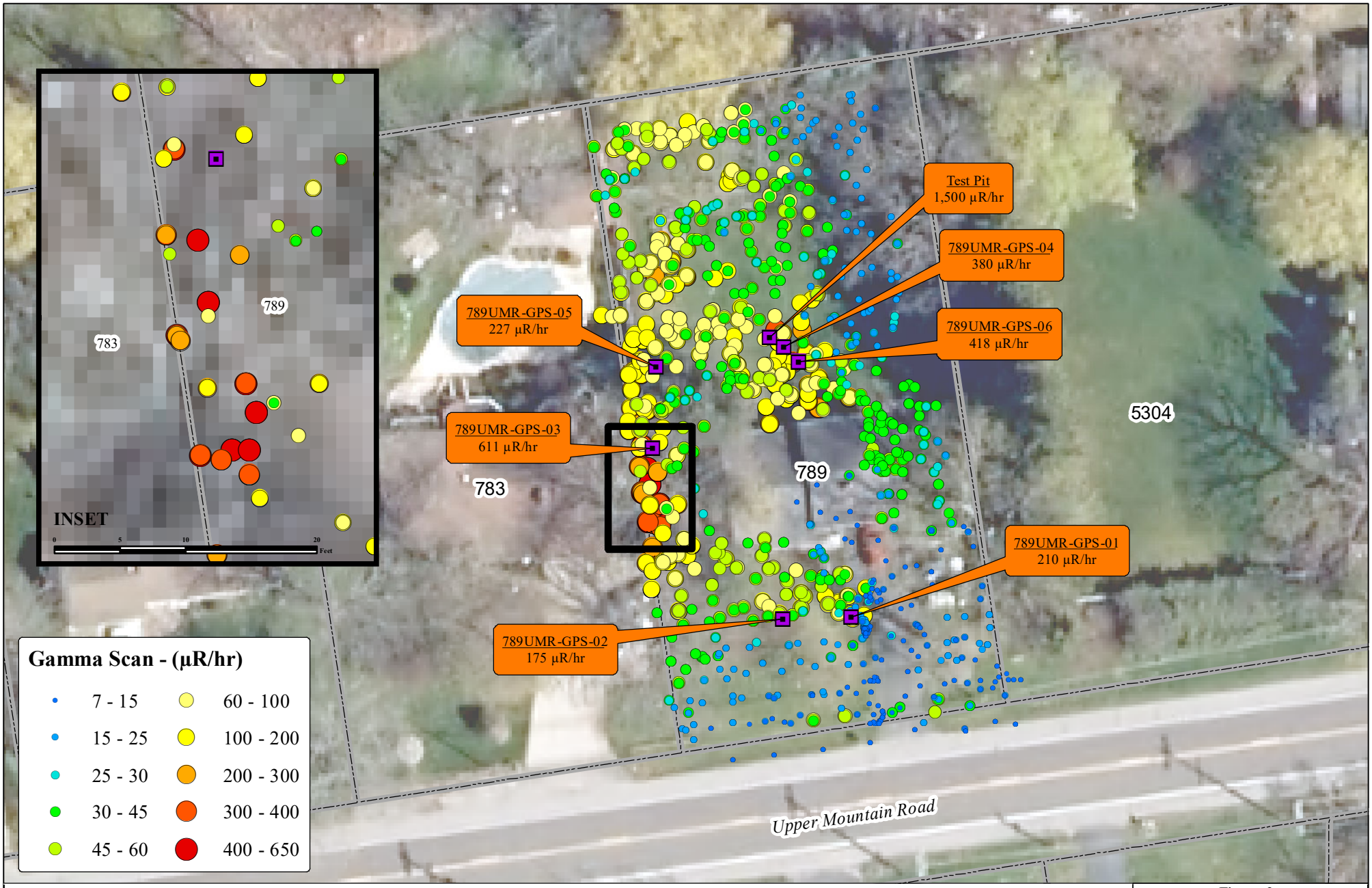
789 Upper Mountain Road
Lewiston, New York

U.S. ENVIRONMENTAL PROTECTION AGENCY
SUPERFUND TECHNICAL ASSESSMENT
& RESPONSE TEAM V
CONTRACT # 68HE0319D0004

DATE MODIFIED: 7/21/2020

GIS ANALYST:	M. LANG
EPA OSC:	P. LISICHENKO
START V SPM:	B. NWOSU
CHARGE #::	40200.021.036.2019

Y:\START_V\00360019\MXD\UMR_SLM.MXD



Spot Reading

Parcel Boundary

Notes:
- µR/hr – micro Roentgen / hour
- Gamma Scans conducted with a Ludlum 2241 with 3x3 Sodium Iodide Scintillator.
- Readings recorded via EPA VIPER system.
- "Test Pit" was a shallow hole, approximately 8-inchs in diameter and excavated to approximately 12-inches below grade. Gamma reading was measured at the base of excavation.

N

0 10 20 40 60 80 100 Feet

DATE MODIFIED: 8/10/2020

Figure 2:
Property Gamma Scan

789 UPPER MOUNTAIN ROAD
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II: SUPERFUND AND
EMERGENCY MANAGEMENT DIVISION
REMOVAL ACTION BRANCH

CREATED BY:	P. LISICHENKO
EPA OSC:	P. LISICHENKO
FILENAME:	200727_789UMR_GammaScan.mxd

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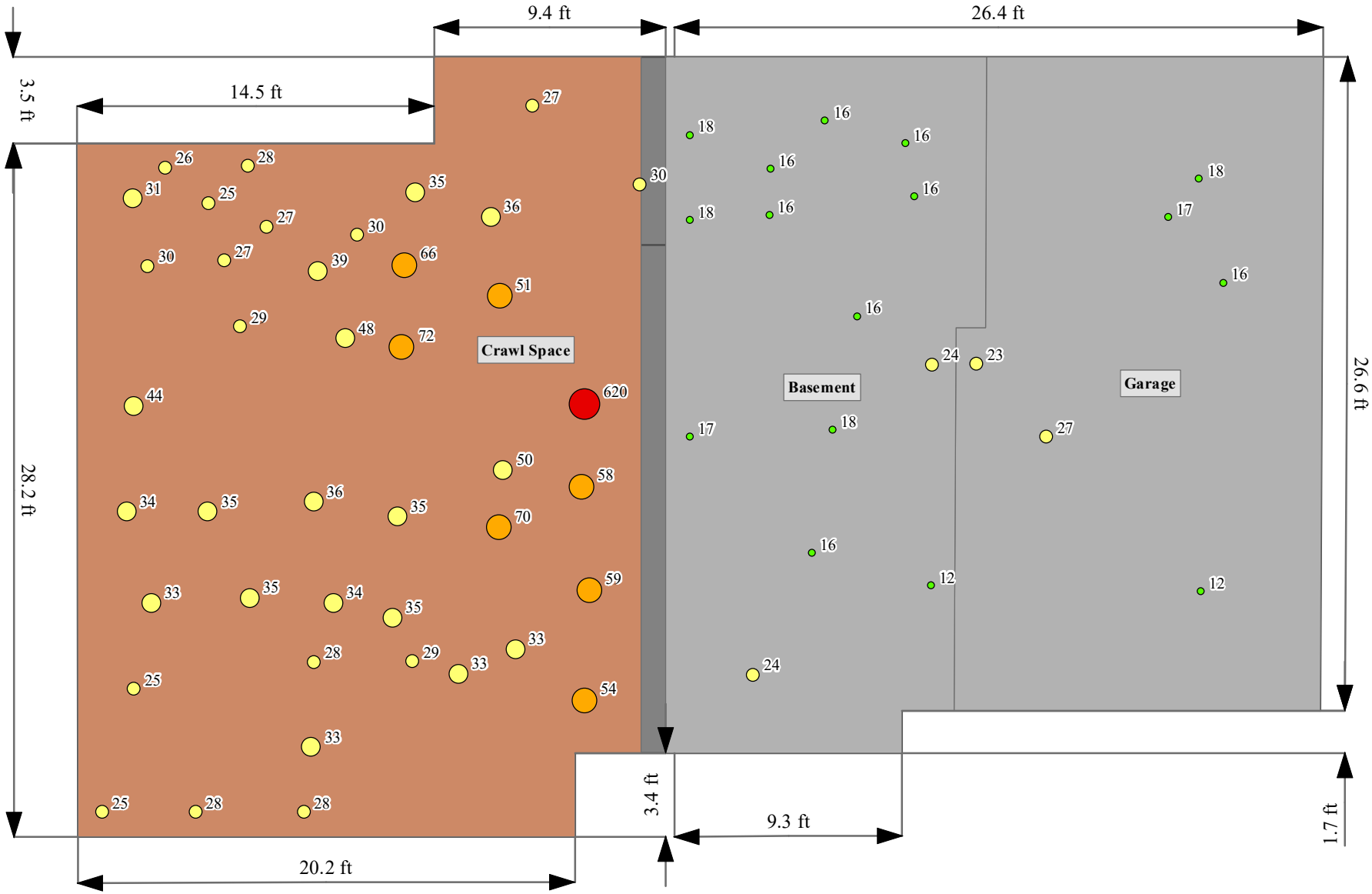

Gamma Scan - (µR/hr)

- 12 - 20
- 20 - 30
- 30 - 50
- 50 - 80
- 80 - 620

Floor Type

- Concrete
- Dirt

Notes:

- µR/hr – micro Roentgen / hour
- Gamma Scans conducted with a Ludlum 2241 with 3x3 Sodium Iodide Scintillator.

0 5 10 20 30 Feet

N

Figure 3A:
Ground Level Gamma Scan

789 UPPER MOUNTAIN ROAD
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II: SUPERFUND AND
EMERGENCY MANAGEMENT DIVISION
REMOVAL ACTION BRANCH

DATE MODIFIED: 8/10/2020

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EPA OSC:	P. LISICHENKO
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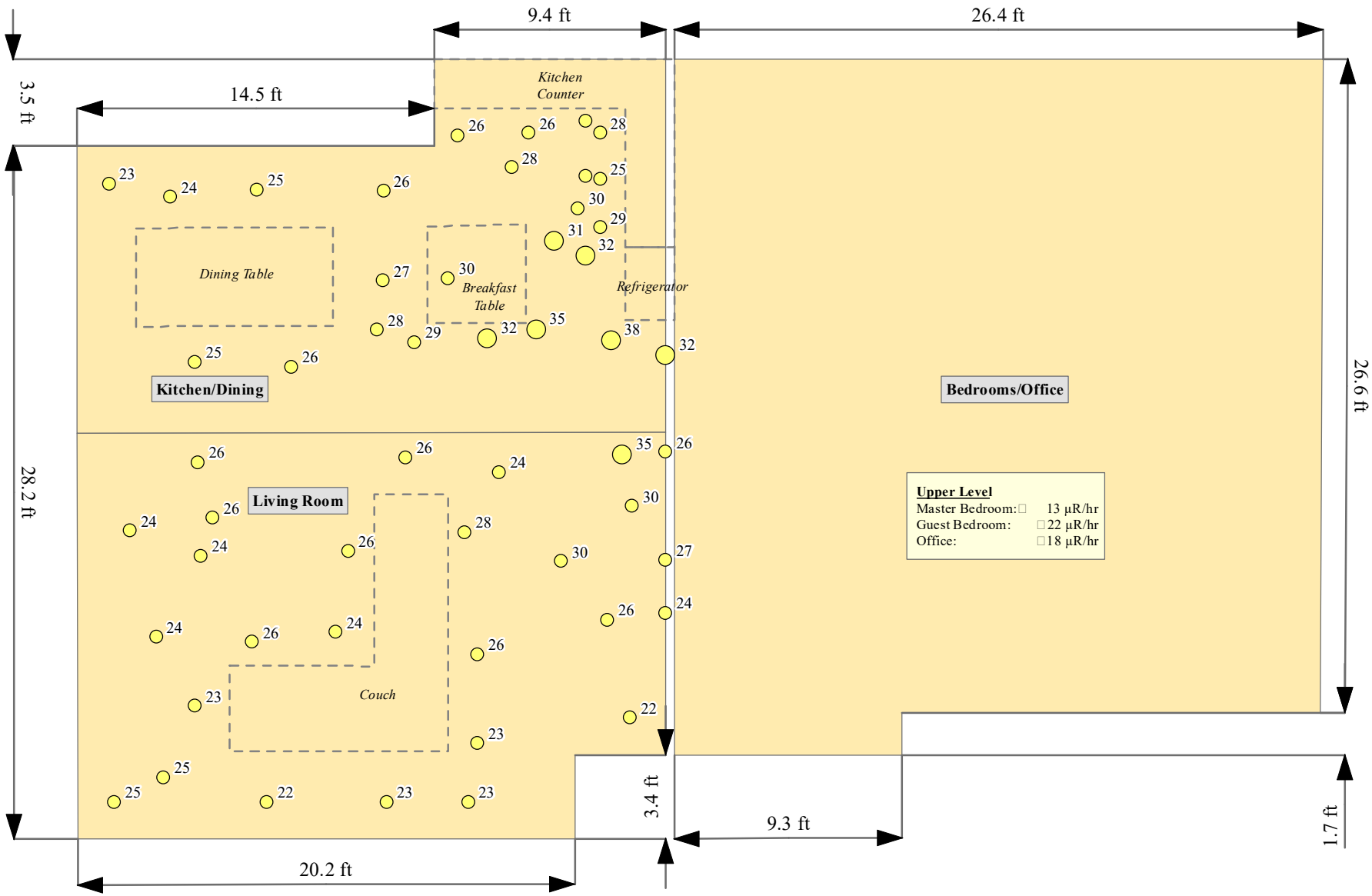

Gamma Scan - (µR/hr)

- 12 - 20
- 20 - 30
- 30 - 50
- 50 - 80
- 80 - 620

Notes:
- µR/hr – micro Roentgen / hour
- Gamma Scans conducted with a Ludlum 2241 with 3x3 Sodium Iodide Scintillator.

N

0 5 10 20 30 Feet

Figure 3B:
First Floor Gamma Scan

789 UPPER MOUNTAIN ROAD
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II: SUPERFUND AND EMERGENCY MANAGEMENT DIVISION
REMOVAL ACTION BRANCH

DATE MODIFIED: 8/10/2020

CREATED BY:	P. LISICHENKO
EPA OSC:	P. LISICHENKO
FILENAME:	200805_789UMR_GammaHouseFirst.mxd

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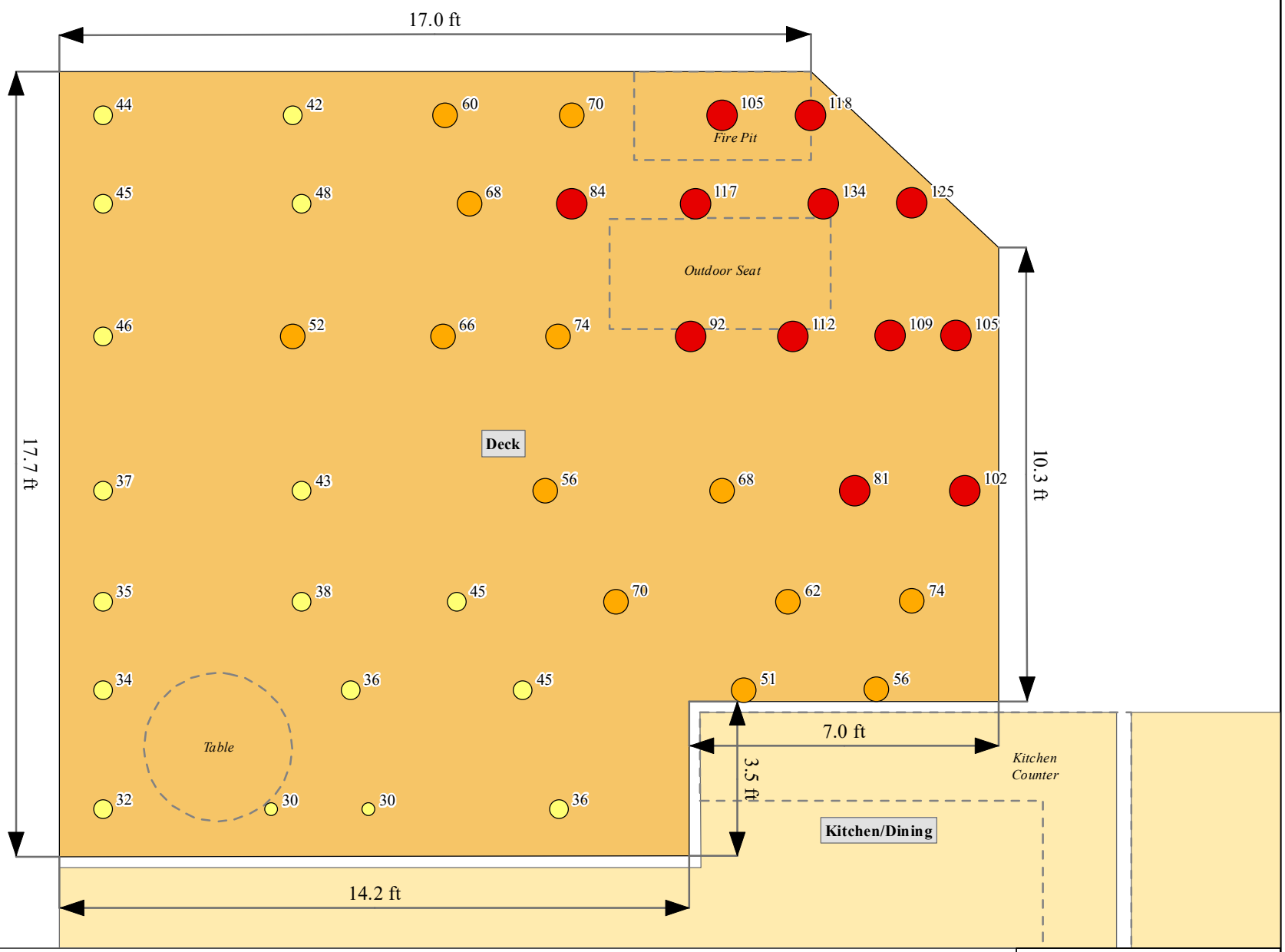

Gamma Scan - (µR/hr)

- 12 - 20
- 20 - 30
- 30 - 50
- 50 - 80
- 80 - 620

Notes:
- µR/hr – micro Roentgen / hour
- Gamma Scans conducted with a Ludlum 2241 with 3x3 Sodium Iodide Scintillator.

N

0 5 10 Feet

Figure 4:
Rear Deck Gamma Scan

789 UPPER MOUNTAIN ROAD
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II: SUPERFUND AND
EMERGENCY MANAGEMENT DIVISION
REMOVAL ACTION BRANCH

CREATED BY:	P. LISICHENKO
EPA OSC:	P. LISICHENKO
FILENAME:	200812_789UMR_RearDeck.mxd

DATE MODIFIED: 8/13/2020

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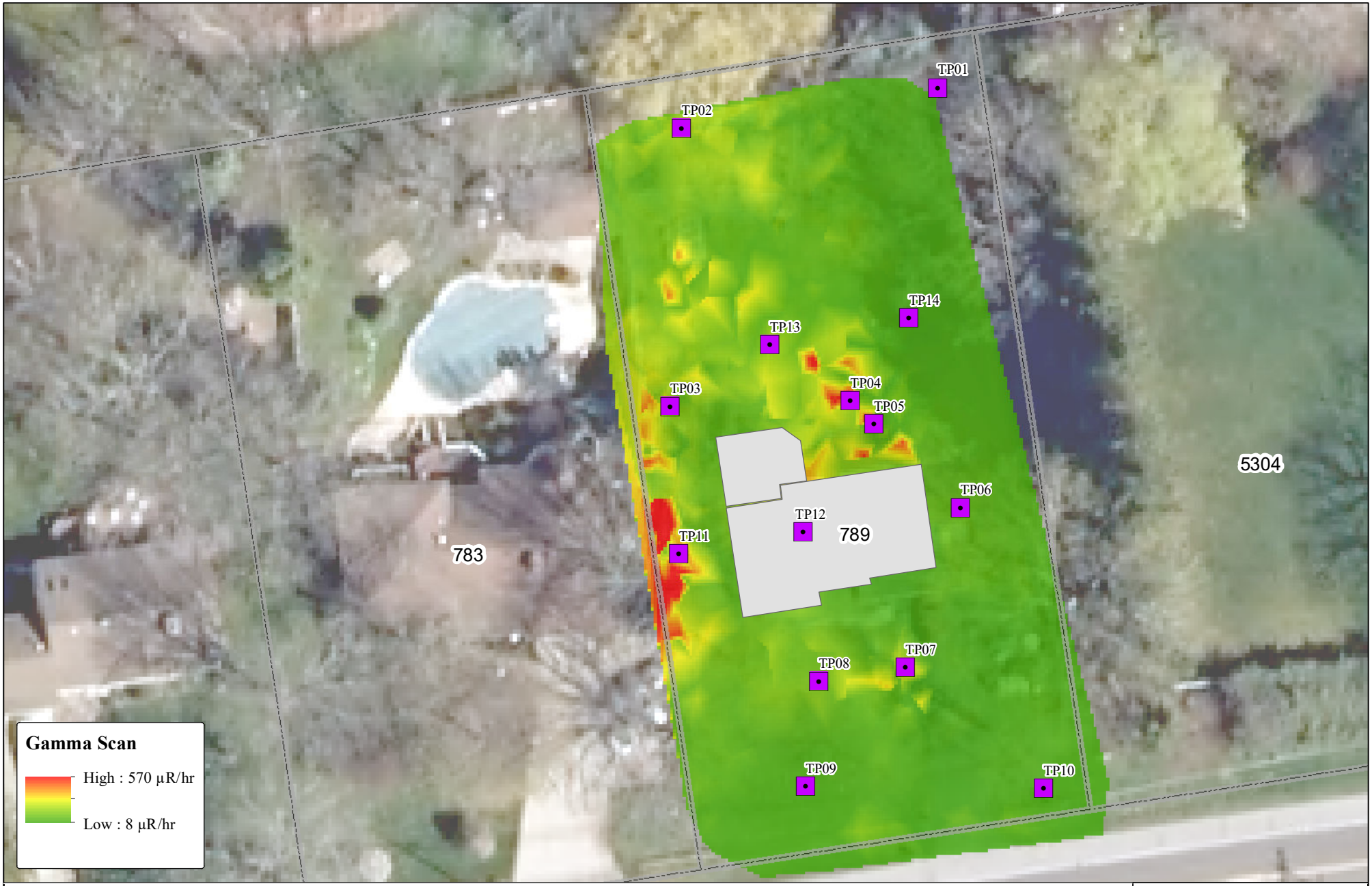

Test Pit Location

House Outline

Parcel Boundary

Notes:
- µR/hr – micro Roentgen / hour
- Gamma Scans conducted with a Ludlum 2241 with 3x3 Sodium Iodide Scintillator and recorded via EPA VIPER System.

N

0 10 20 40 60 80 100 Feet

Figure 5:
Test Pit Locations

789 UPPER MOUNTAIN ROAD
LEWISTON, NEW YORK

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION II: SUPERFUND AND
EMERGENCY MANAGEMENT DIVISION
REMOVAL ACTION BRANCH

DATE MODIFIED: 9/10/2020

CREATED BY:	P. LISICHENKO
EPA OSC:	P. LISICHENKO
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ATTACHMENT B

Tables

Table 1A: Sample Collection and Validated Analytical Results - Radon Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 10 through 13, 2020

START V Sample No.	Canister Serial No.	Result (pCi/L)	Sample Media	Start		Stop		Sample Type	Floor	Location
				Date	Time	Date	Time			
789UMR-AA001-01	2856649	1.8	Charcoal Canister	8/10/2020	14:02	8/13/2020	13:59	Field Sample	Second	Master Bedroom
OFF-BLK-200813-01	2856720	0.1	Charcoal Canister	8/10/2020	14:02	8/13/2020	13:59	Office Blank	Second	Master Bedroom
789UMR-AA003-01	2856642	1.6	Charcoal Canister	8/10/2020	14:10	8/13/2020	14:02	Field Sample	Second	Office/Bedroom
789UMR-AA004-01	2856647	2.1	Charcoal Canister	8/10/2020	14:12	8/13/2020	14:03	Field Sample	Second	Guest Room
789UMR-AA005-01	2856648	2.2	Charcoal Canister	8/10/2020	14:23	8/13/2020	14:08	Field Sample	First	Living Room, South East
789UMR-AA006-01	2856656	2.3	Charcoal Canister	8/10/2020	14:28	8/13/2020	14:10	Field Sample	First	Kitchen/Dining Room
789UMR-AA007-01	2856657	**7.0**	Charcoal Canister	8/10/2020	14:40	8/13/2020	14:16	Field Sample	Basement	South East End
FLD-BLK-200813-01	2856636	0.2	Charcoal Canister	8/10/2020	14:40	8/13/2020	14:16	Field Blank	Basement	South East End
789UMR-AA009-01	2856628	**11.0**	Charcoal Canister	8/10/2020	14:48	8/13/2020	14:22	Field Sample	Crawl Space	Crawl Space
789UMR-AA009-02	2856652	**10.9**	Charcoal Canister	8/10/2020	14:48	8/13/2020	14:22	Field Duplicate	Crawl Space	Crawl Space Duplicate of canister # 2856628
BLK-200813-01	2856702	0.2	Charcoal Canister	8/10/2020	14:48	8/13/2020	14:25	Blank	Crawl Space	Blank

Notes:

START V - Superfund Technical Assessment & Response Team V

No. - Number

pCi/L - picocuries per liter

U.S. Environmental Protection Agency's (EPA's) Site-Specific Action Level (SSAL) for radon is 4.0 pCi/L

Result equals or exceeds the EPA SSAL

Table 1B: Test Pit Log and Sample Collection Summary Table
789 Upper Mountain Road Site
Lewsiton, Niagara County, New York
August 11 through 26, 2020

Sample Date	Test Pit Screening and Documentation				Sample Screening and Analyses					
	Location Number	Surface Gamma (µR/hr)	Depth (inches)	Lithology	Sample Number	Sample Gamma (µR/hr)	Sample Matrix	Sample Collection	Sample Type	Sample Analyses/Method
8/11/2020	789UMR-TP01	15 - 18	0 -6	Dry dark brown silty fine SAND.			Soil/Rock/Slag			
			6 - 12	Dry dark brown to brown silty fine SAND, little to some sub angular gravel.						
			12 - 18	Dry brown to tan silty fine SAND, some sub angular gravel.	789UMR-TP01-1218-01	18		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/11/2020	789UMR-TP02	65 - 80	0 - 6	Dry olive grey silty fine SAND, little to some fine gravel.	789UMR-TP02-0006-01	26	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 - 28	Light grey to olive grey fine to coarse SAND with fine to coarse sub-angular gravel, some brick, some medium to coarse yellowish-orange sand, trace rebar. FILL.	789UMR-TP02-0612-01	33		Grab	Field Sample	
					789UMR-TP02-1218-01	38		Grab	Field Sample	
					789UMR-TP02-1824-01	26		Grab	Field Sample	
			28 - 32	Dry brown silty fine SAND, little fine to medium round to sub angular gravel, trace angular cobbles.	789UMR-TP02-2430-01	19		Grab	Field Sample	
8/11/2020	789UMR-TP03	220 - 260	0 - 2	Dry olive grey silty fine SAND, some coarse sand to fine gravel, trace roots.	789UMR-TP03-0015-01	45	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			2 - 26	Dry light brown fine to coarse SAND, some medium sub-angular gravel, trace refractory brick, trace sewer pipe (debris).	789UMR-TP03-1526-01*	141		Grab	Field Sample	
					789UMR-TP03-1526-02			Grab	Field Duplicate	
			26 - 30	Dry brown silty fine SAND, little fine to medium round to sub angular gravel, trace angular cobbles.	789UMR-TP03-0026-01	58		Composite	Field Sample	
8/11/2020	789UMR-TP04	400 - 410	0 - 12	Dry brown silty fine SAND, little fine to medium gravel, little roots.	789UMR-TP04-0006-01	93	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			12 - 48	Dry dark grey fine to coarse SAND, some fine to coarse angular gravel, some brick, some terracotta fragments, some white nodules, soil has a glass like shimmer in the sunlight.	789UMR-TP04-0612-01	78		Grab	Field Sample	
					789UMR-TP04-1218-01	100		Grab	Field Sample	
					789UMR-TP04-1824-01	174		Grab	Field Sample	
					789UMR-TP04-2430-01	NR		Grab	Field Sample	
					789UMR-TP04-3648-01	127		Grab	Field Sample	
8/25/2020	789UMR-TP10	18 - 22	0 - 6	Dry brown silty fine SAND, little fine to medium gravel, little roots.	789UMR-TP10-0006-01	15	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 - 12	Dry brown silty fine SAND, little fine to medium gravel, little roots, trace brick and coal.	789UMR-TP10-0612-01	18		Grab	Field Sample	
			12 - 24	Dry brown silty fine SAND, little fine to medium round to sub angular gravel, trace angular cobbles.	789UMR-TP10-1218-01	9		Grab	Field Sample	
					789UMR-TP10-1824-01	10		Grab	Field Sample	
8/25/2020	789UMR-TP09	14 - 16	0 - 6	Dry brown silty fine SAND, little fine to medium gravel, little roots.	789UMR-TP09-0006-01	9	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 - 12	Dry brown silty fine SAND and fine to medium GRAVEL, trace angular cobble.	789UMR-TP09-0612-01	11		Grab	Field Sample	
			12 - 18	Dry brown silty fine SAND, little fine to medium gravel.	789UMR-TP09-1218-01	9		Grab	Field Sample	
			18 - 28	Dry brown silty fine SAND, little fine to medium gravel, trace angular cobbles.	789UMR-TP09-1824-01	12		Grab	Field Sample	
8/25/2020	789UMR-TP08	68 - 70	0 - 6	Dry brown silty fine SAND, little fine to medium gravel, little roots.	789UMR-TP08-0006-01	22	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 - 12	Dry brown silty fine SAND, little fine to medium gravel, trace sub rounded cobbles, trace roots.	789UMR-TP08-0612-01	12		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			12 - 30	Dry brown silty fine SAND, some fine to medium gravel, trace roots.	789UMR-TP08-1218-01*	12		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP08-1218-02			Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP08-1824-01	13		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			30 - 36	Dry brown silty fine SAND, some fine to medium gravel. 36 uR/hr (report run on SAM940)	789UMR-TP08-3032-01	36		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/25/2020	789UMR-TP07	187 - 190	0 - 6	Dry brown silty fine SAND, little fine to medium gravel, little roots.	789UMR-TP07-0006-01	27	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 - 12	Dry brown silty fine SAND, little fine to medium gravel, trace roots.	789UMR-TP07-0612-01	25		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			12 - 28	Dry brown silty fine SAND, little fine to medium gravel.	789UMR-TP07-1218-01	18		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
					789UMR-TP07-1824-01	15		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP07-2428-01	16		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/25/2020	789UMR-TP11	798 - 807	0 - 2	Moist dark grey silty fine SAND, some small to large roots.	789UMR-TP11-0006-01**	165	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			2 - 12	Moist dark grey silty fine SAND with fine to medium light grey SAND, trace roots.	789UMR-TP11-0006-02			Grab	Field Duplicate	Full TAL (Hg+CN) + Herbicide
			12 - 30	Light grey fine SAND with dark grey silty fine sand, trace fine gravel. Refusal at 30".	789UMR-TP11-0612-01	157		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
					789UMR-TP11-1218-01	43		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP11-1824-01	37		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP11-2430-01	31		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide

Notes:
START V: Superfund Technical Assessment & Response Team V
µR/hr: Microroentgen per hour, NA: Not Applicable
ICP-MS: Inductively Coupled Plasma Mass Spectrometry
Alpha Spec: Alpha Spectroscopy analysis via A-01-R and ICP-MS
Gamma Spec: Gamma Spectroscopy analysis via GA-01-R and 901.1 (modified)
TAL: Target Analyte List
Full TAL: Volatile Organic Compunds (VOCs) + Percent Moisture, Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metal [including Mercury (Hg) and Cyanide (CN)]
TCLP: Toxicity Characteristic Leaching Procedure
Full TCLP: VOCs, SVOCs, Pesticides, Herbicides, Metals (including Hg)
RCRA: Resource Conservation and Recovery Act
*Radiochemistry sample for Matrix Spike/Matrix Spike Duplicate (MS/MSD)
**Full TAL sample for Matrix Spike/Matrix Spike Duplicate (MS/MSD)
Test pit location surfaces and soil samples were screened using a Ludlum-2241 fitted with a 3x3 Sodium Iodide (NaI) Scintillator

Table 1B: Test Pit Log and Sample Collection Summary Table
789 Upper Mountain Road Site
Lewsiton, Niagara County, New York
August 11 through 26, 2020

Sample Date	Test Pit Screening and Documentation				Sample Screening and Analyses					
	Location Number	Surface Gamma (µR/hr)	Depth (inches)	Lithology	Sample Number	Sample Gamma (µR/hr)	Sample Matrix	Sample Collection	Sample Type	Sample Analyses/Method
8/25/2020	789UMR-DSP01	Not Applicable	NA	NA	789UMR-DSP01-01***	NA	Soil/Rock/Slag	Composite TP07-0006 TP08-1824 TP11-0030	Field Sample	Full TCLP + RCRA Characteristics
					789UMR-DSP01-02				Field Duplicate	Full TCLP + RCRA Characteristics
8/26/2020	789UMR-TP12	428 - 430	0 - 2	Moist light grey silty fine SAND.	789UMR-TP12-0002-01	345	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			2 - 4	Moist light brown silty fine SAND, dense.	789UMR-TP12-0204-01	20		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			4 - 6	Moist light brown to tan silty fine SAND.	789UMR-TP12-0406-01	18		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/26/2020	789UMR-TP06	51 - 53	0 - 4	Moist dark brown silty fine SAND with some clay, little fine gravel, trace roots.	789UMR-TP06-0006-01	40	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			4 - 6	Dry brown silty fine SAND, some fine to medium gravel, little roots.						
			6 - 12	Dry brown silty fine SAND, some fine to course gravel, little sub angular cobles, trace bricks.	789UMR-TP06-0612-01	27		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			12 - 16	Dry brown silty fine SAND, little fine to medium round to sub angular gravel, trace angular cobbles. REFUSAL, large block at the bottom of excavation - possible bedrock.	789UMR-TP06-1216-01	18		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/26/2020	789UMR-TP05	433 - 435	0 - 2	Moist dark brown silty fine SAND with some clay, little fine gravel, trace roots.	789UMR-TP05-0006-01	37	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			2 - 6	Dry brown silty fine SAND, little fine to medium round to sub angular gravel, trace angular cobbles, trace brick.						
			6 - 10	Moist dark grey silty fine SAND, some fine to medium gravel.	789UMR-TP05-0612-01	137		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			10 - 12	Dry dark grey fine SAND with lenticular bands of white material, trace brick.						
			12 - 18	Dry dark grey fine SAND with lenticular bands of white material, trace brick, trace 10" blocks, trace refractory brick.	789UMR-TP05-1218-01	127		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			18 - 24	Dry dark grey fine SAND with lenticular bands of white material, trace brick, trace refractory brick.	789UMR-TP05-1824-01	283		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
					789UMR-TP05-1824-02			Grab	Field Duplicate	Gamma Spec/Alpha Spec/ICP-MS
			24 - 30	Dry dark grey fine SAND with lenticular bands of white material, trace brick, little 10" blocks, trace refractory brick.	789UMR-TP05-2430-01	148		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			30 - 36	Dry dark grey fine SAND with lenticular bands of white material, trace brick, some 10" blocks, little refractory brick.	789UMR-TP05-3036-01	200		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			36 - 54	Dry dark grey fine SAND with lenticular bands of white material, litte brick, some 10" blocks, little refractory brick. Light brown silty fine SAND countered at the bottom, believed to be native soil.	789UMR-TP05-3654-01	110		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
8/26/2020	789UMR-TP13	47 - 49	0 - 6	Moist dark brown silty fine SAND, little clay, litte brick.	789UMR-TP13-0006-01	49	Soil/Rock/Slag	Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			6 -12	Dry dark brown to dark grey silty fine to medium SAND, some angular rock, littlebrick.	789UMR-TP13-0612-01	42		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS/Full TAL (Hg+CN) + Herbicide
			12 - 24	Dry light brown silty fine SAND with medium gravel and lense of medium dark grey sand.	789UMR-TP13-1218-01	43		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
					789UMR-TP13-1824-01	42		Grab	Field Sample	Gamma Spec/Alpha Spec/ICP-MS
			24 - 36	Dry brown silty fine SAND, little fine to medium gravel, little roots.						
8/26/2020	789UMR-DSP02	NA	NA	NA	789UMR-DSP02-01	NA	Soil/Rock/Slag	Composite TP05-0054 TP12-0004 TP13-1218	Field Sample	Full TCLP + RCRA Characteristics
8/26/2020	789UMR-TP14	NR	0 - 6	Dry brown silty fine SAND, little fine to medium gravel, little roots. 17uR/hr.	NA	NA	NA	NA	NA	NA

Notes:
START V: Superfund Technical Assessment & Response Team V
µR/hr: Microroentgen per hour, NA: Not Applicable
ICP-MS: Inductively Coupled Plasma Mass Spectrometry
Alpha Spec: Alpha Spectroscopy analysis via A-01-R and ICP-MS
Gamma Spec: Gamma Spectroscopy analysis via GA-01-R and 901.1 (modified)
TAL: Target Analyte List
Full TAL: Volatile Organic Compunds (VOCs) + Percent Moisture, Semivolatile Organic Compounds (SVOCs), Pesticides, Polychlorinated Biphenyls (PCBs), Metal [including Mercury (Hg) and Cyanide (CN)]
TCLP: Toxicity Characteristic Leaching Procedure
Full TCLP: VOCs, SVOCs, Pesticides, Herbicides, Metals (including Hg)
RCRA: Resource Conservation and Recovery Act
***Full TCLP sample for MS/MSD
Test pit location surfaces and soil samples were screened using a Ludlum-2241 fitted with a 3x3 Sodium Iodide (NaI) Scintillator

Table 2: Validated Analytical Results - TAL VOCs Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/26/2020**	**8/26/2020**
Sample Depth (Inches)			**6-12**	**12-18**	**18-24**	**30-36**	**0-6**	**12-18**	**18-24**	**0-6**	**0-6**	**6-12**	**24-30**	**0-2**	**6-12**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
Units			**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
TAL VOC															
Dichlorodifluoromethane	87,000	NS	1.2 U	1.2 UJ	0.95 U	1.1 U	1.8 U	1.5 U	1.4 U	1.2 U	1.3 U	1.2 U	1.3 U	1.1 U	1.1 U
Chloromethane	110,000	NS	1.8 U	1.8 UJ	1.4 U	1.6 U	2.7 U	2.3 U	2.1 U	1.8 U	2 U	1.8 U	1.9 U	1.6 U	1.7 U
Vinyl Chloride	5,900	20	1.1 U	1.1 UJ	0.9 U	1 U	1.7 U	1.4 U	1.3 U	1.1 U	1.2 U	1.1 U	1.2 U	1 U	1 U
Bromomethane	6,800	NS	1 U	1 UJ	0.85 U	0.95 U	1.6 U	1.3 U	1.3 U	1.1 U	1.2 U	1 U	1.1 U	0.95 U	0.98 U
Chloroethane	14,000,000	NS	1.3 U	1.3 UJ	1.1 U	1.2 U	2 U	1.7 U	1.6 U	1.4 U	1.5 U	1.3 U	1.4 U	1.2 U	1.2 U
Trichlorofluoromethane	23,000,000	NS	1.2 U	1.2 UJ	0.97 U	1.1 U	1.8 U	1.5 U	1.4 U	1.2 U	1.3 U	1.2 U	1.3 U	1.1 U	1.1 U
1,1,2-Trichlorotrifluoroethane	6,700,000	NS	1.3 U	1.3 UJ	1.1 U	1.2 U	2 U	1.7 U	1.6 U	1.4 U	1.5 U	1.3 U	1.4 U	1.2 U	1.2 U
1,1-Dichloroethene	230,000	330	1.1 U	1.1 UJ	0.92 U	1 U	1.7 U	1.5 U	1.4 U	1.2 U	1.3 U	1.1 U	1.2 U	1 U	1.1 U
Acetone	61,000,000	50	4.9 U	4.9 UJ	4 U	4.4 U	7.3 U	6.2 U	5.9 U	5 U	5.4 U	4.9 U	5.3 U	4.4 U	4.6 U
Carbon Disulfide	770,000	NS	0.78 U	0.78 UJ	0.63 U	0.71 U	1.2 U	1 U	0.94 U	0.8 U	0.87 U	0.78 U	0.84 U	0.71 U	0.74 U
Methyl tert-butyl Ether	4,700,000	930	1.1 U	1.1 UJ	0.92 U	1 U	1.7 U	1.5 U	1.4 U	1.2 U	1.3 U	1.1 U	1.2 U	1 U	1.1 U
Methyl Acetate	78,000,000	NS	1.3 U	1.3 UJ	1.1 U	1.2 U	2 U	1.7 U	1.6 U	1.3 U	1.4 U	1.3 U	1.4 U	1.2 U	1.2 U
Methylene Chloride	350,000	50	4.6 U	4.6 UJ	3.7 U	4.2 U	6.9 U	5.9 U	5.5 U	4.7 U	5.1 U	4.6 U	4.9 U	4.2 U	4.3 U
trans-1,2-Dichloroethene	70,000	190	1.3 U	1.3 UJ	1 U	1.2 U	1.9 U	1.6 U	1.5 U	1.3 U	1.4 U	1.3 U	1.4 U	1.2 U	1.2 U
1,1-Dichloroethane	360,000	270	0.75 U	0.76 UJ	0.61 U	0.69 U	1.1 U	0.97 U	0.91 U	0.78 U	0.84 U	0.75 U	0.82 U	0.69 U	0.71 U
Cyclohexane	6,500,000	NS	1.4 U	1.4 UJ	1.1 U	1.2 U	2 U	1.8 U	1.6 U	1.4 U	1.5 U	1.4 U	1.5 U	1.2 U	1.3 U
2-Butanone	27,000,000	120	6.6 U	6.7 UJ	5.4 U	6.1 U	10 U	8.5 U	8 U	6.8 U	7.4 U	6.6 U	7.2 U	6.1 U	6.3 U
Carbon Tetrachloride	65,000	760	0.71 U	0.72 UJ	0.58 U	0.65 U	1.1 U	0.91 U	0.86 U	0.73 U	0.79 U	0.71 U	0.77 U	0.65 U	0.67 U
cis-1,2-Dichloroethene	160,000	250	1.1 U	1.1 UJ	0.91 U	1 U	1.7 U	1.4 U	1.3 U	1.1 U	1.2 U	1.1 U	1.2 U	1 U	1.1 U
Bromochloromethane	150,000	NS	0.84 U	0.84 UJ	0.68 U	0.77 U	1.3 U	1.1 U	1 U	0.86 U	0.93 U	0.84 U	0.91 U	0.76 U	0.79 U
Chloroform	32,000	370	1 U	1 UJ	0.83 U	0.93 U	1.5 U	1.3 U	1.2 U	1.1 U	1.1 U	1 U	1.1 U	0.93 U	0.96 U
1,1,1-Trichloroethane	8,100,000	680	0.61 U	0.61 UJ	0.49 U	0.56 U	0.91 U	0.78 U	0.73 U	0.63 U	0.68 U	0.61 U	0.66 U	0.56 U	0.57 U
Methylcyclohexane	NS	NS	0.37 U	0.37 UJ	0.3 U	0.34 U	0.55 U	0.47 U	0.44 U	0.38 U	0.41 U	0.37 U	0.4 U	0.34 U	0.35 U
Benzene	82,000	60	0.68 U	0.69 UJ	0.55 U	0.62 U	1 U	0.88 U	0.82 U	0.7 U	0.76 U	0.68 U	0.74 U	0.62 U	0.64 U
1,2-Dichloroethane	31,000	20	0.73 U	0.73 UJ	0.59 U	0.67 U	1.1 U	0.93 UJ	0.88 UJ	0.75 UJ	0.81 UJ	0.73 UJ	0.79 UJ	0.66 UJ	0.69 UJ
Trichloroethene	4,100	470	0.68 U	0.68 UJ	0.55 U	0.62 U	1 U	0.87 U	0.82 U	0.7 U	0.76 U	0.68 U	0.73 U	0.62 U	0.64 U
1,2-Dichloropropane	16,000	NS	0.71 U	0.71 UJ	0.57 U	0.65 U	1.1 U	0.91 U	0.85 U	0.73 U	0.79 U	0.7 U	0.76 U	0.64 U	0.67 U
Bromodichloromethane	29,000	NS	0.72 U	0.73 UJ	0.59 U	0.66 U	1.1 U	0.92 U	0.87 U	0.74 U	0.8 U	0.72 U	0.78 U	0.66 U	0.68 U
4-Methyl-2-Pentanone	33,000,000	NS	5.6 U	5.6 UJ	4.5 U	5.1 U	8.4 U	7.2 U	6.7 U	5.8 U	6.2 U	5.6 U	6 U	5.1 U	5.3 U
Toluene	4,900,000	700	0.69 U	0.69 UJ	0.56 U	0.63 U	1 U	0.88 U	0.83 U	0.71 U	0.77 U	0.68 U	0.74 U	0.63 U	0.65 U
t-1,3-Dichloropropene	NS	NS	0.86 U	0.87 UJ	0.7 U	0.79 U	1.3 U	1.1 U	1 U	0.89 U	0.96 U	0.86 U	0.93 U	0.78 U	0.81 U
cis-1,3-Dichloropropene	NS	NS	0.78 U	0.79 UJ	0.64 U	0.72 U	1.2 U	1 U	0.94 U	0.81 U	0.87 U	0.78 U	0.85 U	0.71 U	0.74 U
1,1,2-Trichloroethane	1,500	NS	0.79 U	0.8 UJ	0.65 U	0.73 U	1.2 U	1 U	0.96 U	0.82 U	0.89 U	0.79 U	0.86 U	0.72 U	0.75 U
2-Hexanone	200,000	NS	7.1 U	7.1 UJ	5.7 U	6.4 U	10.6 U	9.1 U	8.5 U	7.3 U	7.9 U	7 U	7.6 U	6.4 U	6.7 U
Dibromochloromethane	830,000	NS	0.85 U	0.86 UJ	0.69 U	0.78 U	1.3 U	1.1 U	1 U	0.88 U	0.95 U	0.85 U	0.92 U	0.77 U	0.8 U
1,2-Dibromoethane	3,600	NS	0.74 U	0.75 UJ	0.6 U	0.68 U	1.1 U	0.95 U	0.89 U	0.77 U	0.83 U	0.74 U	0.8 U	0.68 U	0.7 U
Tetrachloroethene	81,000	1,300	0.7 U	0.7 UJ	0.57 U	0.64 U	1 U	0.9 U	0.84 U	0.72 U	0.78 U	0.7 U	0.75 U	0.64 U	0.66 U
Chlorobenzene	280,000	1,100	0.72 U	0.72 UJ	0.58 U	0.65 U	1.1 U	0.92 U	0.86 U	0.74 U	0.8 U	0.71 U	0.77 U	0.65 U	0.68 U
Ethyl Benzene	580,000	1,000	0.83 U	0.83 UJ	0.67 U	0.76 U	1.2 U	1.1 U	0.99 U	0.85 U	0.92 U	0.82 U	0.89 U	0.75 U	0.78 U
m/p-Xylenes*	580,000	1,600	1.7 U	1.7 UJ	1.4 U	1.6 U	2.6 U	2.2 U	2.1 U	**2.8 J**	**2.7 J**	1.7 U	1.9 U	1.6 U	1.6 U
o-Xylene*	650,000	1,600	0.8 U	0.8 UJ	0.65 U	0.73 U	1.2 U	1 U	0.96 U	**1.3 J**	**1.2 J**	0.79 U	0.86 U	0.73 U	0.75 U
Styrene	6,000,000	NS	1.1 U	1.1 UJ	0.9 U	1 U	1.7 U	1.4 U	1.3 U	1.1 U	1.2 U	1.1 U	1.2 U	1 U	1 U
Bromoform	1,600,000	NS	0.96 U	0.97 UJ	0.78 U	0.88 U	1.4 U	1.2 U	1.2 U	0.99 U	1.1 U	0.96 U	1 U	0.88 U	0.91 U
Isopropylbenzene	1,900,000	NS	0.91 U	0.91 UJ	0.74 U	0.83 U	1.4 U	1.2 U	1.1 U	0.94 U	1 U	0.91 U	0.98 U	0.83 U	0.86 U
1,1,2,2-Tetrachloroethane	60,000	NS	0.85 U	0.86 UJ	0.69 U	0.78 U	1.3 U	1.1 U	1 U	0.88 U	0.95 U	0.85 U	0.92 U	0.78 U	0.8 U
1,3-Dichlorobenzene	NS	2,400	1 U	1 UJ	0.84 U	0.94 U	1.5 U	1.3 U	1.2 U	1.1 U	1.2 U	1 U	1.1 U	0.94 U	0.97 U
1,4-Dichlorobenzene	260,000	1,800	0.68 U	0.69 UJ	0.55 U	0.62 U	1 U	0.87 U	0.82 U	0.7 U	0.76 U	0.68 U	0.74 U	0.62 U	0.64 U
1,2-Dichlorobenzene	1,800,000	1,100	0.83 U	0.84 UJ	0.68 U	0.76 U	1.2 U	1.1 U	1 U	0.86 U	0.93 U	0.83 U	0.9 U	0.76 U	0.78 U
1,2-Dibromo-3-Chloropropane	530	NS	3.1 U	3.1 UJ	2.5 U	2.8 U	4.7 U	4 U	3.7 U	3.2 U	3.5 U	3.1 U	3.4 U	2.8 U	2.9 U
1,2,4-Trichlorobenzene	58,000	NS	0.99 U	0.99 UJ	0.8 U	0.9 U	1.5 U	1.3 U	1.2 U	1 U	1.1 U	0.98 U	1.1 U	0.9 U	0.93 U
1,2,3-Trichlorobenzene	63,000	NS	0.97 U	0.97 UJ	0.78 U	0.88 U	1.4 U	1.2 U	1.2 U	1 U	1.1 U	0.96 U	1 U	0.88 U	0.91 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL VOC: Target Analyte List Volatile Organic Compound

U: Not detected; J: Estimated result; UJ: Not detected at the estimated concentration; NS: Not Specified

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

*No specificed NYSDEC RUSCO for m/p xylene or o-xylene, the NYSDEC RUSCO for mixed xylenes is 1,600 µg/kg

Bold result values are detections

Table 3: Validated Analytical Results - TAL SVOCs Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/26/2020	8/26/2020
Sample Depth (Inches)			6-12	12-18	18-24	30-36	0-6	12-18	18-24	0-6	0-6	6-12	24-30	0-2	6-12
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
Units			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
TAL SVOC															
Benzaldehyde	7,800,000	NS	110 U	110 U	110 U	110 U	120 U	110 U	110 U	110 U	110 U	110 U	100 U	110 U	110 U
Phenol	19,000,000	330	53.7 U	54.5 U	53.9 U	53 U	59 U	54.8 U	54.6 U	55 U	54.9 U	53.4 U	52.5 U	52.8 U	55 U
bis(2-Chloroethyl)ether	23,000	NS	41.2 U	41.9 U	41.4 U	40.7 U	45.3 U	42.1 U	42 U	42.3 U	42.2 U	41 U	40.3 U	40.5 U	42.2 U
2-Chlorophenol	390,000	NS	48.1 U	48.9 U	48.3 U	47.5 U	52.8 U	49.1 U	49 U	49.3 U	49.2 U	47.8 U	47 U	47.3 U	49.3 U
2-Methylphenol	3,200,000	330	41.6 U	42.3 U	41.8 U	41.1 U	45.7 U	42.5 U	42.4 U	42.7 U	42.6 U	41.4 U	40.7 U	40.9 U	42.6 U
2,2-oxybis(1-Chloropropane)	3,100,000	NS	62.1 U	63.2 U	62.5 U	61.4 U	68.3 U	63.4 U	63.3 U	63.7 U	63.6 U	61.8 U	60.7 U	61.1 U	63.7 U
Acetophenone	7,800,000	NS	56.3 U	57.2 U	56.5 U	55.6 U	61.8 U	57.4 U	57.3 U	57.7 U	57.6 U	56 U	55 U	55.3 U	57.6 U
3+4-Methylphenols	NS	NS	66 U	67.1 U	66.3 U	65.2 U	72.5 U	67.3 U	67.2 U	67.7 U	67.5 U	65.6 U	64.5 U	64.9 U	67.6 U
n-Nitroso-di-n-propylamine	7,800	NS	49.5 U	50.3 U	49.7 U	48.9 U	54.4 U	50.5 U	50.4 U	50.7 U	50.7 U	49.2 U	48.4 U	48.7 U	50.7 U
Hexachloroethane	45,000	NS	60.1 U	61.1 U	60.4 U	59.4 U	66 U	61.3 U	61.2 U	61.6 U	61.5 U	59.8 U	58.7 U	59.1 U	61.6 U
Nitrobenzene	130,000	NS	59.9 U	60.9 U	60.2 U	59.2 U	65.9 U	61.1 U	61 U	61.4 U	61.3 U	59.6 U	58.6 U	58.9 U	61.4 U
Isophorone	13,000,000	NS	65.6 U	66.7 U	65.9 U	64.8 U	72.1 U	66.9 U	66.8 U	67.2 U	67.1 U	65.2 U	64.1 U	64.5 U	67.2 U
2-Nitrophenol	NS	NS	95 U	96.6 U	95.5 U	93.9 U	100 U	96.9 U	96.7 U	97.4 U	97.2 U	94.5 U	92.9 U	93.4 U	97.3 U
2,4-Dimethylphenol	1,300,000	NS	72.5 U	73.7 U	72.8 U	71.6 U	79.6 U	73.9 U	73.8 U	74.3 U	74.2 U	72.1 U	70.8 U	71.3 U	74.2 U
bis(2-Chloroethoxy)methane	190,000	NS	64.8 U	65.9 U	65.2 U	64.1 U	71.3 U	66.2 U	66 U	66.5 U	66.4 U	64.5 U	63.4 U	63.8 U	66.4 U
2,4-Dichlorophenol	190,000	NS	64.6 U	65.7 U	65 U	63.9 U	71.1 U	66 U	65.8 U	66.3 U	66.2 U	64.3 U	63.2 U	63.6 U	66.2 U
Naphthalene	130,000	12,000	58.3 U	59.3 U	58.6 U	57.6 U	64.1 U	59.5 U	59.4 U	59.8 U	59.7 U	58 U	57 U	57.4 U	**95.8 J**
4-Chloroaniline	250,000	NS	84.9 U	86.3 U	85.3 U	83.9 U	93.3 U	86.6 U	86.4 U	87 U	86.9 U	84.4 U	83 U	83.5 U	86.9 U
Hexachlorobutadiene	78,000	NS	59.1 U	60.1 U	59.4 U	58.4 U	65 U	60.3 U	60.2 U	60.6 U	60.5 U	58.8 U	57.8 U	58.2 U	60.6 U
Caprolactam	31,000,000	NS	160 U	160 U	160 U	160 U	180 U	170 U	170 U	170 U	170 U	160 U	160 U	160 U	170 U
4-Chloro-3-methylphenol	6,300,000	NS	90.6 U	92.1 U	91 U	89.5 U	99.5 U	92.4 U	92.2 U	92.9 U	92.7 U	90.1 U	88.5 U	89.1 U	92.8 U
2-Methylnaphthalene	240,000	NS	96.9 U	98.5 U	97.4 U	95.7 U	110 U	98.9 U	98.6 U	99.3 U	99.2 U	96.4 U	94.7 U	95.3 U	99.3 U
Hexachlorocyclopentadiene	1,800	NS	190 U	190 U	190 U	190 U	210 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U	190 U
2,4,6-Trichlorophenol	63,000	NS	73.2 U	74.4 U	73.5 U	72.3 U	80.4 U	74.7 U	74.5 U	75 U	74.9 U	72.8 U	71.5 U	72 U	75 U
2,4,5-Trichlorophenol	6,300,000	NS	75 U	76.2 U	75.4 U	74.1 U	82.4 U	76.5 U	76.3 U	76.9 U	76.7 U	74.6 U	73.3 U	73.8 U	76.8 U
1,1-Biphenyl	47,000	NS	77.1 U	78.4 U	77.5 U	76.2 U	84.8 U	78.7 U	78.5 U	79.1 U	78.9 U	76.7 U	75.4 U	75.9 U	79 U
2-Chloronaphthalene	4,800,000	NS	67.2 U	68.3 U	67.5 U	66.4 U	73.8 U	68.6 U	68.4 U	68.9 U	68.8 U	66.8 U	65.7 U	66.1 U	68.8 U
2-Nitroaniline	630,000	NS	100 U	100 U	100 U	100 U	110 U	100 U	100 U	100 U	100 U	100 U	99 U	99.6 U	100 U
Dimethylphthalate	NS	NS	**140 J**	**120 J**	**78.6 J**	**99.9 J**	**180 J**	**150 J**	**90.5 J**	**95.2 J**	**180 J**	**200**	**160 J**	**170 J**	**180**
Acenaphthylene	NS	100,000	72 U	73.2 U	72.4 U	71.1 U	79.1 U	73.5 U	73.3 U	73.8 U	73.7 U	71.6 U	70.4 U	70.8 U	73.8 U
2,6-Dinitrotoluene	19,000	NS	66.8 U	67.9 U	67.1 U	66 U	73.4 U	68.2 U	68 U	68.5 U	68.4 U	66.5 U	65.3 U	65.7 U	68.5 U
3-Nitroaniline	NS	NS	87.8 U	89.3 U	88.3 U	86.8 U	96.5 U	89.6 U	89.4 U	90.1 U	89.9 U	87.4 U	85.9 U	86.4 U	90 U
Acenaphthene	3,600,000	98,000	71.7 U	72.9 U	72 U	70.8 U	78.8 U	73.2 U	73 U	73.5 U	73.4 U	71.3 U	70.1 U	70.5 U	73.4 U
2,4-Dinitrophenol	130,000	NS	240 U	240 U	240 U	240 U	260 U	240 U	240 U	250 U	250 U	240 U	230 U	240 U	250 U
4-Nitrophenol	NS	NS	120 U	120 U	120 U	120 U	130 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Dibenzofuran	78,000	14,000	72.1 U	73.3 U	72.5 U	71.3 U	79.3 U	73.6 U	73.5 U	74 U	73.8 U	71.8 U	70.5 U	71 U	73.9 U
2,4-Dinitrotoluene	130,000	NS	110 U	110 U	110 U	110 U	120 U	110 U	110 U	110 U	110 U	110 U	110 U	110 U	110 U
Diethylphthalate	51,000,000	NS	65.6 U	66.7 U	66 U	64.9 U	72.1 U	67 U	66.8 U	67.3 U	67.2 U	65.3 U	64.2 U	64.6 U	67.2 U
4-Chlorophenyl-phenylether	NS	NS	76.5 U	77.8 U	76.9 U	75.6 U	84.1 U	78.1 U	77.9 U	78.5 U	78.3 U	76.1 U	74.8 U	75.3 U	78.4 U
Fluorene	2,400,000	100,000	85.1 U	86.5 U	85.5 U	84.1 U	93.5 U	86.8 U	86.6 U	87.2 U	87.1 U	84.6 U	83.2 U	83.7 U	87.2 U
4-Nitroaniline	250,000	NS	100 U	100 U	100 U	100 U	110 U	110 U	110 U	110 U	110 U	100 U	100 U	100 U	110 U
4,6-Dinitro-2-methylphenol	5,100	NS	120 U	120 U	120 U	120 U	130 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
n-Nitrosodiphenylamine	11,000,000	NS	51.5 U	52.4 U	51.8 U	50.9 U	56.6 U	52.6 U	52.5 U	52.8 U	52.7 U	51.3 U	50.4 U	50.7 U	52.8 U
4-Bromophenyl-phenylether	NS	NS	51.6 U	52.5 U	51.9 U	51 U	56.7 U	52.7 U	52.6 U	52.9 U	52.8 U	51.3 U	50.5 U	50.8 U	52.9 U
Hexachlorobenzene	21,000	330	51.8 U	52.7 U	52.1 U	51.2 U	57 U	52.9 U	52.8 U	53.2 U	53.1 U	51.6 U	50.7 U	51 U	53.1 U
Atrazine	240,000	NS	76.6 U	77.8 U	77 U	75.7 U	84.2 U	78.2 U	78 U	78.5 U	78.4 U	76.2 U	74.9 U	75.3 U	78.5 U
Pentachlorophenol	100,000	800	140 U	150 U	140 U	140 U	160 U	150 U	150 U	150 U	150 U	140 U	140 U	140 U	150 U
Phenanthrene	NS	100,000	**150 J**	**120 J**	72.1 U	70.8 U	**220**	**94.4 J**	73 U	**110 J**	**86.6 J**	**190**	70.1 U	70.5 U	**560**
Anthracene	18,000,000	100,000	91.7 U	93.2 U	92.2 U	90.6 U	100 U	93.6 U	93.4 U	94.1 U	93.9 U	91.2 U	89.7 U	90.2 U	**130 J**
Carbazole	NS	NS	99 U	100 U	99.5 U	97.9 U	110 U	100 U	100 U	100 U	100 U	98.5 U	96.8 U	97.4 U	**100 J**
Di-n-butylphthalate	6,300,000	NS	130 U	130 U	130 U	130 U	140 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U	130 U
Fluoranthene	2,400,000	100,000	**270**	**260**	110 U	110 U	**490**	**220**	110 U	**230**	**180**	**240**	110 U	110 U	**540**
Pyrene	1,800,000	100,000	**290**	**280**	59.9 U	58.9 U	**470**	**160 J**	60.7 U	**170 J**	**170 J**	**200**	**82.3 J**	58.7 U	**460**
Butylbenzylphthalate	13,000,000	NS	98.4 U	100 U	98.9 U	97.2 U	110 U	100 U	100 U	100 U	100 U	97.9 U	96.2 U	96.8 U	100 U
3,3-Dichlorobenzidine	120,000	NS	81.2 U	82.5 U	81.6 U	80.2 U	89.2 U	82.8 U	82.6 U	83.2 U	83.1 U	80.7 U	79.3 U	79.8 U	83.1 U
Benzo(a)anthracene	110,000	1,000	**180**	**190**	59 U	58 U	**220**	**84.5 J**	59.8 U	**100 J**	**91 J**	**120 J**	57.4 U	57.8 U	**260**
Chrysene	11,000,000	1,000	**170 J**	**160 J**	61 U	60 U	**260**	**100 J**	61.8 U	**120 J**	**100 J**	**110 J**	59.3 U	59.7 U	**220**
Bis(2-ethylhexyl)phthalate	1,300,000	NS	110 U	110 U	110 U	110 U	120 U	110 U	110 U	110 U	110 U	110 U	110 U	110 U	110 U
Di-n-octyl phthalate	630,000	NS	120 U	120 U	120 U	120 U	130 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U	120 U
Benzo(b)fluoranthene	110,000	1,000	**180**	**190**	70.8 U	69.6 U	**330**	**140 J**	71.7 U	**170 J**	**140 J**	**140 J**	68.9 U	69.3 U	**230**
Benzo(k)fluoranthene	1,100,000	1,000	57 U	58 U	57.3 U	56.4 U	**120 J**	58.2 U	58.1 U	58.5 U	58.4 U	56.7 U	55.8 U	56.1 U	**80.4 J**
Benzo(a)pyrene	11,000	1,000	**140 J**	**150 J**	66.5 U	65.4 U	**240**	**89.3 J**	67.4 U	**110 J**	**98.6 J**	**110 J**	64.7 U	65.1 U	**170 J**
Indeno(1,2,3-cd)pyrene	110,000	500	140 U	140 U	140 U	140 U	**170 J**	140 U	140 U	140 U	140 U	140 U	140 U	140 U	140 U
Dibenzo(a,h)anthracene	11,000	330	73.4 U	74.6 U	73.8 U	72.5 U	80.7 U	74.9 U	74.7 U	75.2 U	75.1 U	73 U	71.7 U	72.2 U	75.2 U
Benzo(g,h,i)perylene	NS	100,000	**100 J**	**110 J**	62 U	61 U	**210**	63 U	62.8 U	**73.9 J**	**91.1 J**	**82.1 J**	60.3 U	60.7 U	**110 J**
1,2,4,5-Tetrachlorobenzene	23,000	NS	67 U	68.1 U	67.3 U	66.2 U	73.6 U	68.4 U	68.2 U	68.7 U	68.6 U	66.6 U	65.5 U	65.9 U	68.6 U
1,4-Dioxane	530,000	100	69.8 U	71 U	70.2 U	69 U	76.7 U	71.3 U	71.1 U	71.6 U	71.5 U	69.5 U	68.3 U	68.7 U	71.5 U
2,3,4,6-Tetrachlorophenol	1,900,000	NS	87 U	88.4 U	87.4 U	86 U	95.6 U	88.8 U	88.6 U	89.2 U	89 U	86.5 U	85 U	85.6 U	89.1 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL SVOC: Target Analyte List Semivolatile Organic Compound

U: Not detected; J: Estimated result; NS: Not Specified; µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 4: Validated Analytical Results - TAL PCBs Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)*	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01
Sample Date			**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/25/2020**	**8/25/2020**
Sample Depth (Inches)			**6-12**	**12-18**	**18-24**	**30-36**	**0-6**	**12-18**	**18-24**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
Units			**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
TAL PCB									
Aroclor-1016	4,100	1,000	4.3 U	4.4 U	4.3 U	4.2 U	4.7 U	4.4 U	4.4 U
Aroclor-1221	20,000	1,000	7 U	7.1 U	7.1 U	6.9 U	7.7 U	7.2 U	7.1 U
Aroclor-1232	17,000	1,000	4.8 U	4.9 U	4.8 U	4.7 U	5.3 U	4.9 U	4.9 U
Aroclor-1242	23,000	1,000	6.1 U	6.2 U	6.2 U	6.1 U	6.7 U	6.3 U	6.2 U
Aroclor-1248	23,000	1,000	6.4 U	6.5 U	6.4 U	6.3 U	7 U	6.5 U	6.5 U
Aroclor-1254	1,200	1,000	**23.8 J**	7.1 U	7 U	6.9 U	7.6 U	7.1 U	7.1 U
Aroclor-1262	NS	1,000	4.3 U	4.4 U	4.3 U	4.3 U	4.7 U	4.4 U	4.4 U
Aroclor-1268	NS	1,000	4.1 U	4.1 U	4.1 U	4 U	4.5 U	4.2 U	4.1 U
Aroclor-1260	24,000	1,000	3 U	3 U	3 U	3 U	**13.9 J**	3.1 U	3.1 U

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)*	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/26/2020**	**8/26/2020**
Sample Depth (Inches)			**0-6**	**0-6**	**6-12**	**24-30**	**0-2**	**6-12**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
Units			**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
TAL PCB								
Aroclor-1016	4,100	1,000	4.4 U	4.4 U	4.3 U	4.2 U	4.2 U	4.4 U
Aroclor-1221	20,000	1,000	7.2 U	7.2 U	7 U	6.9 U	6.9 U	7.2 U
Aroclor-1232	17,000	1,000	4.9 U	4.9 U	4.8 U	4.7 U	4.7 U	4.9 U
Aroclor-1242	23,000	1,000	6.3 U	6.3 U	6.1 U	6 U	6 U	6.3 U
Aroclor-1248	23,000	1,000	6.5 U	6.5 U	6.3 U	6.2 U	6.3 U	6.5 U
Aroclor-1254	1,200	1,000	7.1 U	7.1 U	6.9 U	6.8 U	6.8 U	7.1 U
Aroclor-1262	NS	1,000	4.4 U	4.4 U	4.3 U	4.2 U	4.2 U	4.4 U
Aroclor-1268	NS	1,000	4.2 U	4.2 U	4.1 U	4 U	4 U	4.2 U
Aroclor-1260	24,000	1,000	3.1 U	3.1 U	3 U	2.9 U	2.9 U	3.1 U

Notes
START V: Superfund Technical Assessment & Response Team V
TAL PCB: Target Analyte List Polychlorinated Biphenyl
U: Not detected; J: Estimated result; NS: Not Specified
µg/kg: Micrograms per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020
[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010
*NYSDEC RUSCO based on value for PCBs
Bold result values are detections

Table 5: Validated Analytical Results - TAL Pesticides Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01
Sample Date			**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/26/2020**	**8/25/2020**	**8/25/2020**
Sample Depth (Inches)			**6-12**	**12-18**	**18-24**	**30-36**	**0-6**	**12-18**	**18-24**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
Units			**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
TAL Pesticide									
alpha-BHC	8,600	20	0.25 U	0.255 U	0.252 U	0.248 U	0.275 U	0.256 U	0.255 U
beta-BHC	30,000	72	0.335 U	0.342 U	0.338 U	0.332 U	0.369 U	0.343 U	0.342 U
delta-BHC	NS	250	0.273 U	0.278 U	0.275 U	0.27 U	0.3 U	0.279 U	0.278 U
gamma-BHC (Lindane)	21,000	100	0.335 U	0.341 U	0.337 U	0.332 U	0.368 U	0.342 U	0.342 U
Heptachlor	13,000	380	0.144 U	0.147 U	0.145 U	0.143 U	0.159 U	0.147 U	0.147 U
Aldrin	2,300	19	0.178 U	0.182 U	0.18 U	0.177 U	0.196 U	0.182 U	0.182 U
Heptachlor epoxide	1,000	NS	0.324 U	0.33 U	0.326 U	0.321 U	0.356 U	0.331 U	0.33 U
Endosulfan I	NS	4,800	0.184 U	0.188 U	0.186 U	0.182 U	0.203 U	0.188 U	0.188 U
Dieldrin	3,200	39	0.152 U	0.154 U	0.153 U	0.15 U	0.167 U	0.155 U	0.155 U
4,4-DDE	23,000	1,800	**0.4955 J**	**0.4294 J**	**0.2017 J**	**0.9288 J**	**4**	**0.2154 J**	**0.2006 J**
Endrin	19,000	60	0.158 U	0.161 U	0.159 U	0.157 U	0.174 U	0.162 U	0.161 U
Endosulfan II	NS	4,800	0.118 U	0.12 U	0.118 U	0.116 U	0.129 U	0.12 U	0.12 U
4,4-DDD	1,900	2,600	0.226 U	0.23 U	0.227 U	0.223 U	0.248 U	0.231 U	0.23 U
Endosulfan Sulfate	380,000	4,800	0.237 U	0.242 U	0.239 U	0.235 U	0.261 U	0.242 U	0.242 U
4,4-DDT	37,000	1,700	1.8 U	**0.7693 J**	**0.276 J**	**0.9322 J**	**2.8 J**	0.176 U	0.176 U
Methoxychlor	320,000	NS	0.158 U	0.161 U	0.159 U	0.156 U	0.173 U	0.161 U	0.161 U
Endrin ketone	NS	NS	0.123 U	0.125 U	0.124 U	0.122 U	0.135 U	0.126 U	0.126 U
Endrin aldehyde	NS	NS	0.246 U	0.25 U	0.248 U	0.243 U	0.27 U	0.251 U	0.251 U
alpha-Chlordane	NS	910	0.154 U	0.157 U	0.155 U	0.152 U	0.169 U	0.157 U	0.157 U
gamma-Chlordane	NS	NS	0.305 U	0.31 U	0.307 U	0.302 U	0.335 U	0.312 U	0.311 U
Toxaphene	5,700	NS	2.1 U	2.1 U	2.1 U	2.1 U	2.3 U	2.1 U	2.1 U

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/25/2020**	**8/26/2020**	**8/26/2020**
Sample Depth (Inches)			**0-6**	**0-6**	**6-12**	**24-30**	**0-2**	**6-12**
Sample Matrix			**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
Units			**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**	**µg/kg**
TAL Pesticide								
alpha-BHC	8,600	20	0.257 U	0.256 U	0.249 U	0.245 U	0.246 U	0.257 U
beta-BHC	30,000	72	0.344 U	0.344 U	0.334 U	0.328 U	0.33 U	0.344 U
delta-BHC	NS	250	0.28 U	0.28 U	0.272 U	0.267 U	0.268 U	0.28 U
gamma-BHC (Lindane)	21,000	100	0.344 U	0.344 U	0.334 U	0.328 U	0.33 U	0.344 U
Heptachlor	13,000	380	0.148 U	0.148 U	0.144 U	0.141 U	0.142 U	0.148 U
Aldrin	2,300	19	0.183 U	0.183 U	0.178 U	0.174 U	0.176 U	0.183 U
Heptachlor epoxide	1,000	NS	0.333 U	0.332 U	0.323 U	0.317 U	0.319 U	0.333 U
Endosulfan I	NS	4,800	0.189 U	0.189 U	0.184 U	0.18 U	0.181 U	0.189 U
Dieldrin	3,200	39	0.156 U	0.156 U	0.151 U	0.148 U	0.149 U	0.156 U
4,4-DDE	23,000	1,800	**19.8**	**14.6**	**8.6 J**	**4.4 J**	**0.3699 J**	0.168 U
Endrin	19,000	60	0.162 U	0.162 U	0.158 U	0.155 U	0.156 U	0.162 U
Endosulfan II	NS	4,800	0.121 U	0.12 U	0.117 U	0.115 U	0.116 U	0.121 U
4,4-DDD	1,900	2,600	0.232 U	0.231 U	0.225 U	**0.3335 J**	0.222 U	0.232 U
Endosulfan Sulfate	380,000	4,800	0.244 U	0.243 U	0.236 U	0.232 U	0.233 U	0.243 U
4,4-DDT	37,000	1,700	**8.9**	**6.5**	**3.2 J**	**2.6 J**	**5.6**	0.177 U
Methoxychlor	320,000	NS	0.162 U	0.162 U	0.157 U	0.154 U	0.155 U	0.162 U
Endrin ketone	NS	NS	0.126 U	0.126 U	0.123 U	0.12 U	0.121 U	0.126 U
Endrin aldehyde	NS	NS	0.252 U	0.252 U	0.245 U	0.24 U	0.242 U	0.252 U
alpha-Chlordane	NS	910	0.158 U	0.158 U	0.153 U	0.151 U	1.8 U	0.158 U
gamma-Chlordane	NS	NS	0.313 U	0.313 U	0.304 U	0.298 U	0.3 U	0.313 U
Toxaphene	5,700	NS	2.2 U	2.2 U	2.1 U	2.1 U	2.1 U	2.2 U

Notes

START V: Superfund Technical Assessment & Response Team V

TAL: Target Analyte List

U: Not detected; J: Estimated result; NS: Not Specified

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Bold result values are detections

Table 6: Validated Analytical Results - Herbicides Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01
Sample Date			8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/25/2020	8/25/2020
Sample Depth (Inches)			6-12	12-18	18-24	30-36	0-6	12-18	18-24
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
Units			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Herbicide									
DICAMBA	1,900,000	NS	9.6 U	9.7 U	9.6 U	9.4 U	10.5 U	9.8 U	9.7 U
DICHLORPROP	NS	NS	13.9 U	14.2 U	14 U	13.8 U	15.3 U	14.2 U	14.2 U
2,4-D	700,000	NS	25.9 U	26.4 U	26.1 U	25.6 U	28.5 U	26.4 U	26.4 U
2,4,5-TP (Silvex)	510,000	3,800	10.8 U	11 U	10.9 U	10.7 U	11.9 U	11.1 U	11 U
2,4,5-T	630,000	NS	13.1 U	13.3 U	13.2 U	12.9 U	14.4 U	13.3 U	13.3 U
2,4-DB	1,900,000	NS	19.3 U	19.7 U	19.5 U	19.1 U	21.2 U	19.7 U	19.7 U
DINOSEB	63,000	NS	18.9 U	19.2 U	19 U	18.7 U	20.8 U	19.3 U	19.2 U

START V Sample Number	[1]EPA RML for Residential Soil (µg/kg)	[2]NYSDEC RUSCO (µg/kg)	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/26/2020	8/26/2020
Sample Depth (Inches)			0-6	0-6	6-12	24-30	0-2	6-12
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
Units			µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg
Herbicide								
DICAMBA	1,900,000	NS	9.8 UJ	9.8 UJ	9.5 U	9.4 U	9.4 U	9.8 U
DICHLORPROP	NS	NS	14.3 U	14.3 U	13.9 U	13.7 U	13.7 U	14.3 U
2,4-D	700,000	NS	26.6 U	26.6 U	25.8 U	25.4 U	25.5 U	26.6 U
2,4,5-TP (Silvex)	510,000	3,800	11.1 U	11.1 U	10.8 U	10.6 U	10.7 U	11.1 U
2,4,5-T	630,000	NS	13.4 U	13.4 U	13 U	12.8 U	12.9 U	13.4 U
2,4-DB	1,900,000	NS	19.8 U	19.8 U	19.2 U	18.9 U	19 U	19.8 U
DINOSEB	63,000	NS	19.4 U	19.4 U	18.8 U	18.5 U	18.6 U	19.4 U

Notes

START V: Superfund Technical Assessment & Response Team V

U: Not Detected; UJ: Not detected at the estimated reporting limit; NS: Not Specified

µg/kg: Micrograms per kilogram

[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-4} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020

[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010

Table 7: Validated Analytical Results - TAL Metalss Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	[1]EPA RML for Residential Soil (mg/kg)	[2]NYSDEC RUSCO (mg/kg)	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Sample Date			8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/26/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/25/2020	8/26/2020	8/26/2020
Sample Depth (Inches)			6-12	12-18	18-24	30-36	0-6	12-18	18-24	0-6	0-6	6-12	24-30	0-2	6-12
Sample Matrix			Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
TAL Metal															
Aluminum	77,000	NS	**2,210**	**3,130**	**406**	**358**	**9,070**	**10,500**	**7,120**	**4,820 J**	**3,730 J**	**2,140**	**1,640**	**1,300**	**3,760**
Antimony	31	NS	**0.976 J**	**0.738 J-**	0.406 U	0.403 U	0.446 UJ	0.416 UJ	0.408 UJ	0.414 UJ	0.421 UJ	0.392 U	0.389 U	0.4 U	0.421 UJ
Arsenic	35	16	**2.64**	**2.95**	**7.95**	**5.54**	**4.35**	**2.67**	**2.78**	**5.53 J**	**6.06 J**	**6.67**	**5.07**	**6.83**	**3.23**
Barium	15,000	350	**3,160**	**2,380**	**98.3**	**116**	**67.3**	**46.2**	**73.2**	**93.9**	**64.6**	**43.2**	**63.8**	**19.6**	**63.5**
Beryllium	160	14	**0.141 J+**	**0.211 J+**	0.066 U	0.065 U	**0.498**	**0.462**	**0.365**	**0.25 J**	**0.202 J+**	**0.109 J**	**0.089 J**	**0.07 J**	**0.242 J**
Cadmium	71	2.5	**0.555**	**0.631**	**0.178 J**	**0.149 J**	**0.895**	**0.533**	**1.08**	**0.693**	**0.67**	**0.538**	**0.331**	**0.807**	**0.513**
Calcium	NS	NS	**3,110**	**4,440**	**484**	**441**	**3,530**	**3,920**	**36,300**	**1,800**	**1,500**	**908**	**869**	**714**	**11,700**
Chromium	NS	NS	**27.8**	**17.9**	**2.79**	**3.33**	**14.2**	**11.6**	**10.09**	**12.2 J**	**9.62 J**	**5.63**	**6.26**	**2.73**	**10.84**
Cobalt	23	NS	**7.88**	**7.65**	**0.778 J**	**0.848 J**	**11**	**7.78**	**8.56**	**5.19**	**4.48**	**3**	**2.31**	**2.02**	**4.8**
Copper	3,100	270	**46**	**78**	**4.49**	**3.85**	**23.9**	**8.87**	**13.5**	**42.9 J-**	**13.6 J-**	**10.81**	**13.8**	**4.43**	**32.5**
Iron	55,000	NS	**5,780**	**7,710**	**795**	**847**	**14,400**	**13,600**	**12,800**	**7,470 J**	**6,000 J**	**3,250**	**2,910**	**2,260**	**7,790**
Lead	400	400	**30.6**	**32.8**	**16.4**	**13**	**58.6**	**13.9**	**7.46**	**34**	**32.4**	**24.6**	**20.7**	**15.5**	**35**
Magnesium	NS	NS	**1,330**	**1,650**	**196**	**154**	**3,290**	**2,870**	**6,030**	**1,510**	**1,170**	**667**	**560**	**439**	**3,250**
Manganese	1,800	2,000	**501**	**340**	**24.9**	**29.3**	**345**	**301**	**474**	**329 J**	**273 J**	**152**	**128**	**114**	**230**
Nickel	1,500	130	**15.6**	**15**	**2.23**	**1.82**	**18.9**	**12.8**	**16.6**	**12.2**	**10.48**	**6.92**	**5.87**	**3.37**	**11.4**
Potassium	NS	NS	**228**	**337**	**50.2 J**	**37.7 J**	**637**	**564**	**905**	**558**	**451**	**257**	**178**	**134**	**543**
Selenium	390	4	0.316 U	0.324 U	0.327 U	0.324 U	0.359 U	0.335 U	0.328 U	0.334 UJ	0.339 UJ	0.315 U	0.313 U	0.322 U	0.339 U
Silver	390	8.3	**3.92**	**3.88**	0.144 U	0.143 U	**1.38**	**1.25**	**1.2**	**0.359 J**	0.15 UJ	0.139 U	0.138 U	0.142 U	**0.646 J+**
Sodium	NS	NS	**35.3 J**	**37.6 J**	18.5 U	18.4 U	**45 J**	**80.6 J**	**86.6 J**	**26.7 J**	**23.7 J**	17.9 U	**29.1 J**	18.3 U	**53 J**
Thallium	0.78	NS	0.422 U	0.432 U	0.437 U	0.433 U	**1.41 J**	**1.15 J**	**0.941 J**	0.445 U	0.452 U	0.421 U	0.418 U	0.43 U	0.452 U
Vanadium	390	NS	**11.9**	**10.61**	**1.66 J**	**1.82**	**16.2**	**16.8**	**12.9**	**10.32 J**	**8.59 J**	**4.93**	**4.49**	**3.08**	**9.19**
Zinc	23,000	2,200	**75.2**	**117**	**12.8**	**10.59**	**98.2**	**40.8**	**34.8**	**64.4 J**	**52.9 J**	**31.6**	**31.6**	**16.8**	**62.3**
Mercury	11	0.73	**0.068**	**0.172**	**0.06**	**0.78**	**0.319**	**0.048**	**0.027**	**0.122**	**0.105**	**0.076**	**0.078**	**0.04**	**0.24**
Cyanide	23	27	**0.18 J**	**0.16 J**	0.089 U	**0.11 J**	**0.13 J**	**0.16 J**	0.091 U	**0.15 J**	**0.12 J**	**0.097 J**	**0.12 J**	**0.099 J**	**0.15 J**

Notes
START V: Superfund Technical Assessment & Response Team V
TAL: Target Analyte List
U: Not detected; UJ: Not detected at the estimated reporting limit; NS: Not Specified;
J: Estimated result; J-: Estimated result, may be biased low; J+: Estimated result, may be biased high
mg/kg: milligrams per kilogram
[1]U.S. Environmental Protection Agency (EPA) Removal Management Levels (RMLs) for Residential Soil corresponding to 10^{-6} Risk Level for Carcinogens or a Hazard Quotient (HQ) of 1 for Non-Carcinogens, November 2020
[2]New York State Department of Environmental Conservation (NYSDEC) Residential Use Soil Cleanup Objectives (RUSCOs), May 2010
Bold result values are detections
Result values highlighted yellow exceed the respective NYSDEC RUSCO
Result values in red exceed the respective EPA RML

Table 8: Validated Analytical Results - TCLP and RCRA Charateristics Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25 and 26, 2020

START V Sample Number	**[1]EPA MCC**	**789UMR-DSP01-01**	**789UMR-DSP01-02**	**789UMR-DSP02-01**
Sample Date		**8/25/2020**	**8/25/2020**	**8/26/2020**
Sample Depth (Inches)		**NA**	**NA**	**NA**
Sample Matrix		**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
TCLP VOC	**(µg/L)**			
Vinyl Chloride	200	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	700	0.27 U	0.27 U	0.27 U
2-Butanone (Methyl ethyl ketone)	200,000	**8.3 J**	**8.6 J**	**8 J**
Carbon Tetrachloride	500	0.26 U	0.26 U	0.26 U
Chloroform	6,000	0.19 U	0.19 U	0.19 U
Benzene	500	0.13 U	0.13 U	0.13 U
1,2-Dichloroethane	500	0.27 U	0.27 U	0.27 U
Trichloroethene	500	0.13 U	0.13 U	0.13 U
Tetrachloroethene	700	0.13 U	0.13 U	0.13 U
Chlorobenzene	100,000	0.12 U	0.12 U	0.12 U
TCLP SVOC	**(µg/L)**			
Pyridine	5,000	34 UJ	34 UJ	34 U
1,4-Dichlorobenzene	7,500	16.8 U	16.8 U	16.8 U
2-Methylphenol	200,000	13.7 U	13.7 U	13.7 U
3+4-Methylphenols	NS	60.1 U	60.1 U	60.1 U
Hexachloroethane	3,000	22.2 U	22.2 U	22.2 U
Nitrobenzene	2,000	14.2 U	14.2 U	14.2 U
Hexachlorobutadiene	500	21.4 U	21.4 U	21.4 U
2,4,6-Trichlorophenol	2,000	16.2 U	16.2 U	16.2 U
2,4,5-Trichlorophenol	400,000	10.7 U	10.7 U	10.7 U
2,4-Dinitrotoluene	130	28.1 U	28.1 U	28.1 U
Hexachlorobenzene	130	18.9 U	18.9 U	18.9 U
Pentachlorophenol	100,000	29.5 U	29.5 U	29.5 U
TCLP Pesticide	**(µg/L)**			
gamma-BHC (Lindane)	400	0.078 U	0.078 U	0.078 U
Heptachlor	8	0.024 U	0.024 U	0.024 U
Heptachlor epoxide	8	0.059 U	0.059 UJ	0.059 UJ
Endrin	20	0.028 U	0.028 U	0.028 U
Methoxychlor	10,000	0.094 U	0.094 U	0.094 U
Toxaphene	500	1.1 U	1.1 U	1.1 U
Chlordane	30	0.781 U	0.781 U	0.781 U
TCLP Herbicide	**(µg/L)**			
2,4-D	10,000	6 U	6 UJ	6 UJ
2,4,5-TP (Silvex)	1,000	2.6 U	2.6 UJ	2.6 UJ
TCLP Metal	**(µg/L)**			
Arsenic	5,000	23.8 U	23.8 U	23.8 U
Barium	100,000	**1,220**	**1,220**	**1,910**
Cadmium	1,000	7.11 U	7.11 U	7.11 U
Chromium	5,000	8.07 U	8.07 U	8.07 U
Lead	5,000	12.5 U	12.5 U	12.5 U
Selenium	1,000	25.5 UJ	100 U	100 U
Silver	5,000	12.1 U	12.1 U	12.1 U
Mercury	200	0.385 UJ	0.385 U	0.385 U
RCRA Characteristic	**(NA)**			
Corrosivity - pH	NS	**8.4 J**	**8.61 J**	**8.58 J**
Ignitability - °C	NS	**NI**	**NI**	**NI**
Reactive Cyanide - mg/kg	NS	0.049 U	0.50 U	0.05 U
Reactive Sulfide - mg/kg	NS	10 U	10 U	10 U

Notes
START V: Superfund Technical Assessment & Response Team V
TCLP: Toxicity Characteristic Leaching Procedure
VOC: Volatile Organic Compound; SVOC: Semivolatile Organic Compound
RCRA: Resource Conservation and Recovery Act
U: Not detected; UJ: Not detected at the estimated reporting limit; J: Estimated result
µg/L: Micrograms per liter
mg/kg: Milligrams per kilograms
NI: Not Ignitible; NS: Not Specified; NA: Not Applicable; °C: degree centigrade
[1]U.S. Environmental Protection Agency (EPA) Maximum Concentration of Contaminants (MCC) for toxicity characteristic as determined by TCLP, October 2009
Bold result values are detections

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP01-1218-01			789UMR-TP02-0006-01			789UMR-TP02-0612-01			789UMR-TP02-1218-01			789UMR-TP02-1824-01			789UMR-TP02-2430-01			789UMR-TP03-0015-01			789UMR-TP03-0026-01		
		Sample Date	8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020		
		Sample Depth (Inches)	12-18			0-6			6-12			12-18			18-24			24-30			0-15			0-26		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	9.6			53			76			73			88			9.8			33			25		
Uranium-233 (U-233)	ICP-MS	NS	0.026			0.027			0.027			0.026			0.025			0.026			0.028			0.029		
Uranium-234 (U-234)	ICP-MS	NS	0.026			0.027			0.027			0.026			0.025			0.026			0.028			0.029		
Uranium-235 (U-235)	ICP-MS	NS	0.029	J		0.085			0.19			0.23			0.13			0.026			0.1			0.17		
Uranium-236 (U-236)	ICP-MS	NS	0.026			0.027			0.027			0.026			0.025			0.026			0.028			0.029		
Uranium-238 (U-238)	ICP-MS	NS	3			11			24			30			17			2.2			13			23		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	NA			NA			NA			NA			NA			NA			NA			NA		
Thorium-228 (Th-228)	A-01-R	NS	0.856		0.2	20.9		1.98	40.1		4.15	57.9		5.74	32.6		3.03	1.47		0.286	55.8		5.59	130		12.7
Thorium-230 (Th-230)	A-01-R	NS	0.868	J	0.21	5.02	J	0.622	13.8		1.83	15.9	J	2.08	8.61		0.988	0.915	J	0.231	11.7		1.71	20.7		3.14
Thorium-232 (Th-232)	A-01-R	NS	1.03		0.212	18.8		1.8	38.4		4	56		5.56	30.9		2.88	1.19		0.247	55.6		5.57	127		12.4
Uranium-233/234 (U-233/234)	A-01-R	5.18	0.777		0.17	5.07		0.585	**12.5**		**1.29**	**13.6**		**1.37**	**6.3**		**0.701**	0.629		0.153	**9.59**		**1.02**	**17.1**		**1.72**
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.0313	U	0.045	0.412		0.133	0.684		0.204	0.692		0.201	0.271		0.111	0.0766		0.0606	0.366		0.143	0.773		0.235
Uranium-238 (U-238)	A-01-R	5.18	0.847		0.177	5.02		0.58	**11.6**		**1.21**	**13.5**		**1.36**	**6.34**		**0.705**	0.672		0.158	**10**		**1.06**	**18**		**1.79**
Actinium-228 (Ac-228)	GA-01-R	5.01	0.586		0.376	**30.4**		**3.38**	**53.6**		**5.62**	**74.3**		**7.69**	**38.9**		**4.2**	1.52		0.302	**73**		**7.67**	**116**		**12.2**
Bismuth-212 (Bi-212)	GA-01-R	5.01	0.373	UJ	0.685	**38.1**	**J**	**6.7**	**58.1**	**J**	**6.98**	**82**	**J**	**11.3**	**41.8**	**J**	**6.03**	0.813	UJ	1.48	**82**	**J**	**12**	**122**	**J**	**16.8**
Bismuth-214 (Bi-214)	GA-01-R	NS	0.825		0.198	10.5		1.43	22.5		2.48	26.9		2.99	14.2		1.66	1.12		0.345	17.5		2.22	28.8		3.53
Cesium-137 (Cs-137)	GA-01-R	28.40	1.16		0.183	0.13	U	0.398	-0.211	U	0.311	-0.287	U	0.439	1.78		0.461	-0.0358	U	0.137	-0.327	U	0.506	1.61		0.648
Lead-212 (Pb-212)	GA-01-R	5.01	0.949		0.181	**33.8**		**4.48**	**57.5**		**7.48**	**79**		**8.33**	**41.6**		**4.43**	1.52		0.28	**81.2**		**8.59**	**133**		**17.3**
Lead-214 (Pb-214)	GA-01-R	NS	1.02		0.195	11.1		1.38	24.2		2.61	28.5		3.04	16.2		1.9	1.14		0.233	17.3		2.09	28.1		3.21
Potassium-40 (K-40)	GA-01-R	83.30	15.2		2.48	15.3		3.61	12.2		3.32	14.2		4.2	15.9		4.15	14.6		2.99	27.7		5.43	7.36	U	7.74
Protactinium-234M (Pa-234M)	GA-01-R	5.18	-0.146	U	0.435	0.352	U	0.542	0.365	U	0.377	-0.802	U	2.79	-0.561	U	1.84	0.137	U	0.394	0.231	U	0.398	0.13	U	0.681
Radium-224 (Ra-224)	GA-01-R	NS	0.949		0.181	33.8		4.48	57.5		7.48	79		8.33	41.6		4.43	1.52		0.28	81.2		8.59	133		17.3
Radium-226* (Ra-226)	GA-01-R	5.18	0.825		0.198	**10.5**		**1.43**	**22.5**		**2.48**	**26.9**		**2.99**	**14.2**		**1.66**	1.12		0.345	**17.5**		**2.22**	**28.8**		**3.53**
Radium-228 (Ra-228)	GA-01-R	5.01	0.586		0.376	**30.4**		**3.38**	**53.6**		**5.62**	**74.3**		**7.69**	**38.9**		**4.2**	1.52		0.302	**73**		**7.67**	**116**		**12.2**
Thallium-208 (Tl-208)	GA-01-R	5.01	0.327		0.0985	**10.6**		**1.27**	**18**		**1.95**	**27**		**2.88**	**14**		**1.59**	0.537		0.136	**26.2**		**2.83**	**43.7**		**4.73**
Thorium-234 (Th-234)	GA-01-R	5.18	1.25		0.725	**9.1**		**3.29**	7.46	U	2.1	7.99	U	2.86	**12**		**2.88**	-0.0384	U	0.091	9.43	U	3.66	11.5	U	3.99

Notes:
START V: Superfund Technical Assessment & Response Team V
No.: Number, NA: Not Analyzed, NS: Not Specified,
U: Non-Detected, J: Estimated Result
Radium-226* analyzed via 21 days ingrowth
mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram
ICP-MS: Inductively Coupled Plasma-Mass Spectrometry
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)
Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP03-1526-01			789UMR-TP03-1526-02			789UMR-TP04-0006-01			789UMR-TP04-0612-01			789UMR-TP04-1218-01			789UMR-TP04-1824-01			789UMR-TP04-2430-01			789UMR-TP04-3648-01		
		Sample Date	8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020			8/11/2020		
		Sample Depth (Inches)	15-26			15-26			0-6			6-12			12-18			18-24			24-30			36-48		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	36			65			110			91			130			79			29			45		
Uranium-233 (U-233)	ICP-MS	NS	0.028			0.027			0.026			0.028			0.028			0.029			0.027			0.027		
Uranium-234 (U-234)	ICP-MS	NS	0.028			0.027			0.026			0.028			0.028			0.029			0.027			0.027		
Uranium-235 (U-235)	ICP-MS	NS	0.44			0.77			0.13			0.093			0.23			0.9			0.31			0.41		
Uranium-236 (U-236)	ICP-MS	NS	0.028			0.027			0.026			0.028			0.028			0.029			0.027			0.027		
Uranium-238 (U-238)	ICP-MS	NS	55			100			18			11			30			120			41			53		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	NA			NA			NA			NA			NA			NA			NA			NA		
Thorium-228 (Th-228)	A-01-R	NS	197		24.1	420		55.6	80.3		7.8	42.6	J	5.03	132		15	440		44.8	253		25.9	468		47.6
Thorium-230 (Th-230)	A-01-R	NS	37		8.2	66.7	J	18	58.4		8.48	9.89	J	1.9	29.5		5.41	83.1		13	46.5		7.44	78.4		12.8
Thorium-232 (Th-232)	A-01-R	NS	182		22.7	404		53.9	78.6		7.65	47.7	J	5.47	133		15.1	438		44.5	245		25.1	488		49.2
Uranium-233/234 (U-233/234)	A-01-R	5.18	**53.1**	**J**	**4.69**	**67.2**	**J**	**5.92**	**11.8**		**1.21**	**7.34**		**0.802**	**19.9**		**1.96**	**62.5**	**J**	**5.48**	**33.1**		**2.94**	**41.5**		**3.67**
Uranium-235/236 (U-235/236)	A-01-R	21.10	2.99	J	0.458	3.97	J	0.591	0.545		0.174	0.463		0.149	1.12		0.288	3.74	J	0.536	2.17		0.331	3.78		0.499
Uranium-238 (U-238)	A-01-R	5.18	**54.3**	**J**	**4.79**	**70**	**J**	**6.16**	**11.7**		**1.2**	**7.11**		**0.781**	**20.6**		**2.02**	**61.2**	**J**	**5.38**	**33.1**		**2.94**	**39.1**		**3.47**
Actinium-228 (Ac-228)	GA-01-R	5.01	**489**		**49.8**	**453**		**46.3**	**89.3**		**9.65**	**48.1**		**5.22**	**159**		**16.7**	**499**		**51.1**	**285**		**29.4**	**342**		**34.9**
Bismuth-212 (Bi-212)	GA-01-R	5.01	**509**	**J**	**54.2**	**457**	**J**	**49.6**	**90.1**	**J**	**12.2**	**49.5**	**J**	**7.08**	**169**	**J**	**19.4**	**513**	**J**	**54.7**	**292**	**J**	**32.5**	**366**	**J**	**42.3**
Bismuth-214 (Bi-214)	GA-01-R	NS	95.9		10	86.7		9.33	20.7		2.54	11.8		1.48	37.1		4.29	102		10.8	65.4		7.06	75.1		8.13
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.829	U	1.31	1.29		0.589	0.0886	U	0.661	0.177	U	0.427	-0.506	U	0.812	-0.709	U	1.03	-0.623	U	1.04	-0.269	U	1.18
Lead-212 (Pb-212)	GA-01-R	5.01	**528**		**55.2**	**494**		**64**	**108**		**14.1**	**57.2**		**6.1**	**179**		**18.7**	**557**		**72.2**	**314**		**40.8**	**381**		**39.9**
Lead-214 (Pb-214)	GA-01-R	NS	99		10.5	90.5		9.59	23.5		2.76	13.3		1.66	38.1		4.29	112		11.8	66.3		7.2	77.6		8.35
Potassium-40 (K-40)	GA-01-R	83.30	7.29	U	11.6	16.3		7.95	29.7		6.85	25.5		4.65	9.36		7.01	17.3		9.79	4.5	U	7.3	53		11
Protactinium-234M (Pa-234M)	GA-01-R	5.18	1.74	U	1.71	2.22	U	3.59	0.742	U	3.49	-0.187	U	0.792	1.83	U	1.28	4		2.29	3.77	U	2.17	-0.361	U	0.872
Radium-224 (Ra-224)	GA-01-R	NS	528		55.2	494		64	108		14.1	57.2		6.1	179		18.7	557		72.2	314		40.8	381		39.9
Radium-226* (Ra-226)	GA-01-R	5.18	**95.9**		**10**	**86.7**		**9.33**	**20.7**		**2.54**	**11.8**		**1.48**	**37.1**		**4.29**	**102**		**10.8**	**65.4**		**7.06**	**75.1**		**8.13**
Radium-228 (Ra-228)	GA-01-R	5.01	**489**		**49.8**	**453**		**46.3**	**89.3**		**9.65**	**48.1**		**5.22**	**159**		**16.7**	**499**		**51.1**	**285**		**29.4**	**342**		**34.9**
Thallium-208 (Tl-208)	GA-01-R	5.01	**172**		**17.6**	**155**		**16.2**	**34.7**		**3.84**	**18.9**		**2.1**	**58.1**		**6.11**	**176**		**18.4**	**102**		**10.8**	**127**		**13.1**
Thorium-234 (Th-234)	GA-01-R	5.18	28.6	U	6.76	28.2	U	6.13	11.1	U	4.14	7.15	U	3.19	18	U	4.57	37.6	U	7.02	**53.4**		**10.2**	26.4	U	6.71

Notes:
START V: Superfund Technical Assessment & Response Team V
No.: Number, NA: Not Analyzed, NS: Not Specified,
U: Non-Detected, J: Estimated Result
Radium-226* analyzed via 21 days ingrowth
mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram
ICP-MS: Inductively Coupled Plasma-Mass Spectrometry
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)
Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP05-0006-01			789UMR-TP05-0612-01			789UMR-TP05-1218-01			789UMR-TP05-1824-01			789UMR-TP05-1824-02			789UMR-TP05-2430-01			789UMR-TP05-3036-01			789UMR-TP05-3654-01		
		Sample Date	8/26/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020		
		Sample Depth (Inches)	0-6			6-12			12-18			18-24			18-24			24-30			30-36			36-54		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	20	J		35	J		38	J		41	J		45	J		33	J		31	J		26	J	
Uranium-233 (U-233)	ICP-MS	NS	0.016			0.014			0.014			0.015			0.013			0.015			0.014			0.015		
Uranium-234 (U-234)	ICP-MS	NS	0.016			0.014			0.014			0.015			0.013			0.015			0.014			0.015		
Uranium-235 (U-235)	ICP-MS	NS	0.096	J		0.39	J		0.48	J		0.6	J		0.69	J		0.55	J		0.6	J		0.53	J	
Uranium-236 (U-236)	ICP-MS	NS	0.016			0.014			0.014			0.015			0.013			0.015			0.014			0.015		
Uranium-238 (U-238)	ICP-MS	NS	13			51			62			79			92			73			79			69		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	2.2	J		3.9	J		4.2	J		4.4	J		4.9	J		3.6	J		3.4	J		2.9	J	
Thorium-228 (Th-228)	A-01-R	NS	23.4		2.27	46.5		4.35	55.5		5.48	216		20.5	248		23.1	158		15.2	102		10.2	25.6		2.38
Thorium-230 (Th-230)	A-01-R	NS	4.61		0.637	9.93		1.22	10.4		1.52	31.8		4.51	35.8		4.87	25.3		3.67	18.6		2.82	6.87		0.779
Thorium-232 (Th-232)	A-01-R	NS	22.8		2.22	45.4		4.25	55.6		5.48	193		18.5	235		22	148		14.3	93.7		9.47	25.4		2.36
Uranium-233/234 (U-233/234)	A-01-R	5.18	**13.5**	**J**	**1.37**	**37.1**	**J**	**3.57**	**29.3**	**J**	**2.83**	**60.3**	**J**	**5.71**	**54.9**	**J**	**5.16**	**44.4**	**J**	**4.22**	**47**	**J**	**4.49**	**37.8**	**J**	**3.58**
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.582		0.189	1.69		0.442	1.53		0.381	2.6	J	0.652	2.89		0.639	2.23		0.529	2.83	J	0.634	1.66		0.419
Uranium-238 (U-238)	A-01-R	5.18	**13.4**	**J**	**1.37**	**38**	**J**	**3.64**	**28.8**	**J**	**2.78**	**60.6**	**J**	**5.74**	**54.3**	**J**	**5.1**	**46.2**	**J**	**4.38**	**51.6**	**J**	**4.88**	**37.7**	**J**	**3.57**
Actinium-228 (Ac-228)	GA-01-R	5.01	**95.6**		**9.97**	**301**		**30.8**	**203**		**20.8**	**492**		**50.3**	**492**		**50.3**	**421**		**42.9**	**316**		**32.4**	**220**		**22.6**
Bismuth-212 (Bi-212)	GA-01-R	5.01	**99.4**		**11.5**	**311**		**33.2**	**208**		**22.7**	**486**		**51.2**	**489**		**51.5**	**436**		**45.6**	**340**		**37.1**	**233**		**25.8**
Bismuth-214 (Bi-214)	GA-01-R	NS	23.3		2.71	68.4		7.23	42.8		4.6	102		10.7	103		10.9	105		10.9	71.4		7.51	60		6.4
Cesium-137 (Cs-137)	GA-01-R	28.40	0.269	U	0.487	-0.458	U	0.664	0.312	U	0.576	0.451	U	0.779	-0.496	U	0.718	-0.553	U	0.83	0.115	U	0.662	-0.372	U	0.535
Lead-212 (Pb-212)	GA-01-R	5.01	**110**		**14.3**	**317**		**41.1**	**225**		**29.2**	**462**		**59.8**	**466**		**60.3**	**404**		**42.2**	**295**		**38.2**	**229**		**29.7**
Lead-214 (Pb-214)	GA-01-R	NS	24.3		2.64	73.2		7.73	46		4.92	105		11	105		10.9	103		10.5	79.1		8.46	62.8		6.6
Potassium-40 (K-40)	GA-01-R	83.30	24.5		5.45	2.14	U	4.81	34.7		6.44	2.85	U	5.17	3.35	U	5.08	4.05	U	5.52	3.18	U	3.92	2.43	U	3.79
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.825	U	2.57	1.04	U	0.933	-0.156	U	0.331	3.66	U	1.49	2.37	U	5.02	0.265	U	0.399	1.25	U	3.66	0.459	U	0.656
Radium-224 (Ra-224)	GA-01-R	NS	110		14.3	317		41.1	225		29.2	462		59.8	466		60.3	404		42.2	295		38.2	229		29.7
Radium-226* (Ra-226)	GA-01-R	5.18	**23.3**		**2.71**	**68.4**		**7.23**	**42.8**		**4.6**	**102**		**10.7**	**103**		**10.9**	**105**		**10.9**	**71.4**		**7.51**	**60**		**6.4**
Radium-228 (Ra-228)	GA-01-R	5.01	**95.6**		**9.97**	**301**		**30.8**	**203**		**20.8**	**492**		**50.3**	**492**		**50.3**	**421**		**42.9**	**316**		**32.4**	**220**		**22.6**
Thallium-208 (Tl-208)	GA-01-R	5.01	**34.1**		**3.64**	**104**		**10.9**	**70.3**		**7.38**	**165**		**17.2**	**166**		**17.2**	**148**		**15.1**	**111**		**11.6**	**75.8**		**7.93**
Thorium-234 (Th-234)	GA-01-R	5.18	6.81	UJ	2.25	16.9	UJ	4.37	18.3	UJ	4.17	18.2	UJ	4.19	17.1	UJ	4.37	18.3	UJ	4.72	15.7	UJ	3.8	17.4	UJ	3.51

Notes:
START V: Superfund Technical Assessment & Response Team V
No.: Number, NA: Not Analyzed, NS: Not Specified,
U: Non-Detected, J: Estimated Result
Radium-226* analyzed via 21 days ingrowth
mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram
ICP-MS: Inductively Coupled Plasma-Mass Spectrometry
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)
Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP06-0006-01			789UMR-TP06-0612-01			789UMR-TP06-1216-01			789UMR-TP07-0006-01			789UMR-TP07-0612-01			789UMR-TP07-1218-01			789UMR-TP07-1824-01			789UMR-TP07-2428-01		
		Sample Date	8/26/2020			8/26/2020			8/26/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020		
		Sample Depth (Inches)	0-6			6-12			12-16			0-6			6-12			12-18			18-24			24-28		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	7.9	J		10	J		7.7	J		10	J		15	J		8.7	J		7.5	J		7.9	J	
Uranium-233 (U-233)	ICP-MS	NS	0.017			0.015			0.015			0.017			0.015			0.014			0.015			0.015		
Uranium-234 (U-234)	ICP-MS	NS	0.017			0.015			0.015			0.017			0.015			0.014			0.015			0.015		
Uranium-235 (U-235)	ICP-MS	NS	0.028	J		0.045	J		0.032	J		0.04	J		0.061	J		0.027	J		0.018	J		0.02	J	
Uranium-236 (U-236)	ICP-MS	NS	0.017			0.015			0.015			0.017			0.015			0.014			0.015			0.015		
Uranium-238 (U-238)	ICP-MS	NS	3.5			6.1			4.6			5.2			7.4			3.5			2.4			2.5		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	0.86	J		1.1	J		0.85	J		1.1	J		1.7	J		0.95	J		0.82	J		0.87	J	
Thorium-228 (Th-228)	A-01-R	NS	3.06		0.401	16.8		1.58	9.07	J	0.922	36.9		3.47	53.3		5.41	7.41		0.779	4.61		0.548	6.51		0.708
Thorium-230 (Th-230)	A-01-R	NS	1.36		0.233	3.42		0.434	2.34	J	0.329	6.67		0.865	9.14		1.48	1.76		0.272	2.41		0.347	1.72		0.272
Thorium-232 (Th-232)	A-01-R	NS	3.27		0.416	15.9		1.51	8.52	J	0.873	37.2		3.49	53.3		5.41	6.64		0.711	4.39		0.527	5.75		0.64
Uranium-233/234 (U-233/234)	A-01-R	5.18	1.84	J	0.289	2.73	J	0.389	3.41	J	0.427	**8.44**	**J**	**0.905**	**10.9**	**J**	**1.12**	3.44	J	0.446	1.61	J	0.265	1.82	J	0.291
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.13		0.0749	0.0164	U	0.0531	0.179		0.0851	0.711		0.192	0.749		0.202	0.432		0.139	0.13		0.073	0.071		0.0562
Uranium-238 (U-238)	A-01-R	5.18	2.27	J	0.332	2.51	J	0.367	3.53	J	0.437	**8.01**	**J**	**0.868**	**10.7**	**J**	**1.11**	3.23	J	0.425	1.75	J	0.279	1.83	J	0.292
Actinium-228 (Ac-228)	GA-01-R	5.01	**10.8**		**1.36**	**38.8**		**4.15**	**15.9**		**1.88**	**51.2**		**5.44**	**64.1**		**6.78**	**14.1**		**1.65**	**7.38**		**0.99**	**7.39**		**0.958**
Bismuth-212 (Bi-212)	GA-01-R	5.01	**11.3**		**3.11**	**39.9**		**6.31**	**17.1**		**2.8**	**51.4**		**6.64**	**66.7**		**8.61**	**14.6**		**3.16**	**8.35**		**2.51**	**7.79**		**1.9**
Bismuth-214 (Bi-214)	GA-01-R	NS	3.59		0.654	10.2		1.4	4.24		0.666	10.1		1.23	13		1.57	3.02		0.52	1.77		0.391	2.22		0.45
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.161	U	0.252	0.218	U	0.35	0.111	U	0.171	0.0459	U	0.319	-0.00369	U	0.41	0.0527	U	0.152	0.0191	U	0.216	0.0921	U	0.17
Lead-212 (Pb-212)	GA-01-R	5.01	**11.5**		**1.32**	**41.4**		**4.41**	**18.7**		**2.47**	**58.1**		**7.59**	**71.1**		**7.53**	**16.5**		**2.19**	**7.9**		**1.11**	**8.28**		**0.956**
Lead-214 (Pb-214)	GA-01-R	NS	3.31		0.561	10.3		1.33	4.59		0.576	11.2		1.29	13.5		1.59	3.44		0.47	2.08		0.462	2.15		0.431
Potassium-40 (K-40)	GA-01-R	83.30	16.8		3.11	16.3		4.33	16.8		2.75	22.1		4.27	25.1		4.14	16.2		2.56	16.6		3.14	21		3.52
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.0543	U	0.748	0.84	U	0.936	-0.0643	U	0.194	0.804	U	1.47	-0.103	U	0.324	0.316	U	0.581	-0.0753	U	0.233	-0.274	U	0.897
Radium-224 (Ra-224)	GA-01-R	NS	11.5		1.32	41.4		4.41	18.7		2.47	58.1		7.59	71.1		7.53	16.5		2.19	7.9		1.11	8.28		0.956
Radium-226* (Ra-226)	GA-01-R	5.18	3.59		0.654	**10.2**		**1.4**	4.24		0.666	**10.1**		**1.23**	**13**		**1.57**	3.02		0.52	1.77		0.391	2.22		0.45
Radium-228 (Ra-228)	GA-01-R	5.01	**10.8**		**1.36**	**38.8**		**4.15**	**15.9**		**1.88**	**51.2**		**5.44**	**64.1**		**6.78**	**14.1**		**1.65**	**7.38**		**0.99**	**7.39**		**0.958**
Thallium-208 (Tl-208)	GA-01-R	5.01	4.18		0.555	**13.6**		**1.52**	**5.88**		**0.703**	**17.3**		**1.9**	**23.8**		**2.57**	**5.02**		**0.604**	2.5		0.376	2.6		0.387
Thorium-234 (Th-234)	GA-01-R	5.18	0.562	UJ	4.31	4.74	UJ	2.3	1.83	UJ	0.832	4.23	UJ	1.72	2.76	UJ	8.74	0.816	UJ	0.564	1.64	UJ	1.11	2.52	UJ	1.6

Notes:

START V: Superfund Technical Assessment & Response Team V

No.: Number, NA: Not Analyzed, NS: Not Specified,

U: Non-Detected, J: Estimated Result

Radium-226* analyzed via 21 days ingrowth

mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram

ICP-MS: Inductively Coupled Plasma-Mass Spectrometry

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)

Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP08-0006-1			789UMR-TP08-0612-01			789UMR-TP08-1218-01			789UMR-TP08-1218-02			789UMR-TP08-1824-01			789UMR-TP08-3032-01			789UMR-TP09-0006-01			789UMR-TP09-0612-01		
		Sample Date	8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020		
		Sample Depth (Inches)	0-6			6-12			12-18			12-18			18-24			30-32			0-6			6-12		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	6.5	J		6.2			6.8			5.6			5			14			6.4			6.5		
Uranium-233 (U-233)	ICP-MS	NS	0.016			0.015			0.015			0.014			0.015			0.014			0.014			0.015		
Uranium-234 (U-234)	ICP-MS	NS	0.016			0.015			0.015			0.014			0.015			0.014			0.014			0.015		
Uranium-235 (U-235)	ICP-MS	NS	0.021	J		0.026	U		0.02	U		0.02	U		0.018	U		0.077			0.016	U		0.018	U	
Uranium-236 (U-236)	ICP-MS	NS	0.016			0.015			0.015			0.014			0.015			0.014			0.014			0.015		
Uranium-238 (U-238)	ICP-MS	NS	2.8			3.2			2.6			2.8			2.4			9.8			2.6			2.5		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	0.72	J		0.68			0.74			0.61			0.55			1.6			0.71			0.72		
Thorium-228 (Th-228)	A-01-R	NS	2.38		0.341	5.39		1.04	3.01		0.422	3.06		0.396	3.64		0.462	12.7		2.19	0.991		0.212	0.912		0.264
Thorium-230 (Th-230)	A-01-R	NS	1.25		0.225	2.14		0.613	1.17	J	0.243	0.998	J	0.205	1.51	J	0.266	3.81		1.1	1.12	J	0.23	1.02	J	0.277
Thorium-232 (Th-232)	A-01-R	NS	2.53		0.354	5.45		1.04	2.83		0.397	2.89		0.378	3.49		0.443	10.7		1.96	1.02		0.205	0.891		0.241
Uranium-233/234 (U-233/234)	A-01-R	5.18	1.5	J	0.268	1.37		0.237	1.25		0.22	1.21		0.218	0.961		0.192	**6.67**		**0.74**	0.796		0.169	0.846		0.171
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.126		0.0767	0.0554		0.0477	0.0277		0.0321	0.0837		0.058	0.0197	U	0.0279	0.324		0.123	0.0422	U	0.0426	0.0268		0.031
Uranium-238 (U-238)	A-01-R	5.18	1.39	J	0.255	1.47		0.246	0.858		0.176	1.17		0.214	1.01		0.198	**6.58**		**0.732**	0.811		0.171	0.909		0.178
Actinium-228 (Ac-228)	GA-01-R	5.01	4.35		0.87	**6.06**		**0.862**	3.49		0.559	3.18		0.497	3.24		0.552	**59.1**		**6.15**	1.55		0.341	1.24		0.429
Bismuth-212 (Bi-212)	GA-01-R	5.01	**6.06**		**1.89**	**6.02**		**2.07**	**6.62**		**1.88**	0.752	U	1.11	4.17		1.26	**57.1**		**6.98**	0.134	U	1.11	-0.529	U	1.58
Bismuth-214 (Bi-214)	GA-01-R	NS	1.86		0.442	1.65		0.37	1.2		0.287	1.25		0.261	1.18		0.328	12		1.53	0.859		0.229	0.802		0.292
Cesium-137 (Cs-137)	GA-01-R	28.40	0.0461	U	0.146	0.0398	U	0.176	-0.0704	U	0.156	0.00336	U	0.0957	-0.0337	U	0.183	-0.225	U	0.325	0.059	U	0.0964	0.0231	U	0.11
Lead-212 (Pb-212)	GA-01-R	5.01	**5.57**		**0.817**	**6.21**		**0.733**	3.78		0.574	2.91		0.434	3.2		0.503	**68.1**		**8.86**	1.24		0.226	0.88		0.21
Lead-214 (Pb-214)	GA-01-R	NS	1.62		0.327	1.9		0.365	1.35		0.313	1.19		0.211	1.42		0.341	12.9		1.47	0.962		0.187	0.792		0.201
Potassium-40 (K-40)	GA-01-R	83.30	18.5		3.45	16.8		2.97	15		3.6	16.2		2.57	16.7		3.23	22.4		3.9	17.3		2.76	14.9		3.04
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.265	U	0.409	0.196	U	0.681	0.0395	U	0.314	0.163	U	0.468	-0.098	U	0.251	0.821	U	0.659	-0.0274	U	0.0633	0.104	U	0.141
Radium-224 (Ra-224)	GA-01-R	NS	5.57		0.817	6.21		0.733	3.78		0.574	2.91		0.434	3.2		0.503	68.1		8.86	1.24		0.226	0.88		0.21
Radium-226* (Ra-226)	GA-01-R	5.18	1.86		0.442	1.65		0.37	1.2		0.287	1.25		0.261	1.18		0.328	**12**		**1.53**	0.859		0.229	0.802		0.292
Radium-228 (Ra-228)	GA-01-R	5.01	4.35		0.87	**6.06**		**0.862**	3.49		0.559	3.18		0.497	3.24		0.552	**59.1**		**6.15**	1.55		0.341	1.24		0.429
Thallium-208 (Tl-208)	GA-01-R	5.01	1.88		0.341	1.85		0.303	1.21		0.23	1.07		0.173	1.22		0.244	**20.8**		**2.27**	0.49	U	0.119	0.327	U	0.11
Thorium-234 (Th-234)	GA-01-R	5.18	0.967	UJ	1.37	1.75	UJ	1.34	-0.937	U	1.38	0.928	U	0.948	1.32	U	1.09	0.296	U	0.627	0.54	U	1.29	0.448	U	0.539

Notes:
START V: Superfund Technical Assessment & Response Team V
No.: Number, NA: Not Analyzed, NS: Not Specified,
U: Non-Detected, J: Estimated Result
Radium-226* analyzed via 21 days ingrowth
mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram
ICP-MS: Inductively Coupled Plasma-Mass Spectrometry
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)
Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP09-1218-01			789UMR-TP09-1824-01			789UMR-TP10-0006-01			789UMR-TP10-0612-01			789UMR-TP10-1218-01			789UMR-TP10-1824-01			789UMR-TP11-0006-01			789UMR-TP11-0612-01		
		Sample Date	8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020			8/25/2020		
		Sample Depth (Inches)	12-18			18-24			0-6			6-12			12-18			18-24			0-6			6-12		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	6.5			6.6			7.2			6.6			6.3			6.5			39			42		
Uranium-233 (U-233)	ICP-MS	NS	0.015			0.016			0.016			0.016			0.015			0.015			0.014			0.014		
Uranium-234 (U-234)	ICP-MS	NS	0.015			0.016			0.016			0.016			0.015			0.015			0.014			0.014		
Uranium-235 (U-235)	ICP-MS	NS	0.021	U		0.027	U		0.023	U		0.027	U		0.019	U		0.02	U		0.38			0.46		
Uranium-236 (U-236)	ICP-MS	NS	0.015			0.016			0.016			0.016			0.015			0.015			0.014			0.014		
Uranium-238 (U-238)	ICP-MS	NS	2.7			3.3			2.7			3			2.6			2.7			50			59		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	0.71			0.72			0.79			0.72			0.69			0.71			4.3			4.6		
Thorium-228 (Th-228)	A-01-R	NS	1.14		0.242	2.7		0.372	2.65		0.381	4.56		0.549	1.85		0.301	1.84		0.292	36.9		11.4	877		91.4
Thorium-230 (Th-230)	A-01-R	NS	1.11	J	0.243	1.41	J	0.253	1.64	J	0.288	1.74	J	0.292	1.11	J	0.229	0.953	J	0.206	18.3		7.63	137		24.3
Thorium-232 (Th-232)	A-01-R	NS	1.28		0.246	2.84		0.381	2.39		0.351	4.37		0.528	1.8		0.29	1.69		0.271	32.4		10.2	864		90.2
Uranium-233/234 (U-233/234)	A-01-R	5.18	1.03		0.202	1.13		0.208	0.997		0.198	1.37		0.239	0.993		0.199	0.848		0.172	**45.1**		**4.29**	**48.2**	**J**	**4.58**
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.0201	U	0.0285	0.0373		0.0374	0.0274	U	0.0349	0.109		0.0664	0.0891		0.0618	0.0689		0.0508	1.81		0.476	2.25	J	0.551
Uranium-238 (U-238)	A-01-R	5.18	0.844		0.18	1.24		0.22	1.12		0.212	1.38		0.24	0.742		0.168	0.875		0.174	**43.9**		**4.19**	**49.1**	**J**	**4.65**
Actinium-228 (Ac-228)	GA-01-R	5.01	1.18		0.255	2.38		0.401	2.65		0.533	3.86		0.563	2.3		0.365	2.66		0.499	**286**		**29.3**	**331**		**33.9**
Bismuth-212 (Bi-212)	GA-01-R	5.01	0.254	U	0.786	2.73		1.08	3.61		1.27	**6.13**		**1.6**	3.16		0.967	3.5		1.32	**286**		**30.7**	**337**		**35.9**
Bismuth-214 (Bi-214)	GA-01-R	NS	0.769		0.173	0.381	U	0.126	0.916		0.29	1.37		0.32	0.996		0.286	1.37		0.318	61.3		6.5	73.1		7.7
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.00644	U	0.0919	-0.011	U	0.0946	0.0344	U	0.14	0.061	U	0.0917	0.0556	U	0.0954	-0.13	U	0.167	-0.275	U	0.707	-0.453	U	0.652
Lead-212 (Pb-212)	GA-01-R	5.01	1.02		0.179	2.51		0.379	2.5		0.429	4.25		0.607	2.34		0.361	2.33		0.39	**291**		**37.7**	**343**		**44.5**
Lead-214 (Pb-214)	GA-01-R	NS	0.725		0.144	1.25		0.232	1.23		0.299	1.56		0.26	1.12		0.196	1.27		0.269	67.3		7.12	77.4		8.16
Potassium-40 (K-40)	GA-01-R	83.30	15.1		2.3	15.9		2.43	17.7		3.48	16.7		2.53	15.7		2.44	16.4		3.13	15		5.97	9.51		5.68
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.102	U	0.186	0.0243	U	0.0459	-0.0616	U	0.158	-0.000613	U	0.00161	-0.00743	U	0.0142	-0.0821	U	0.211	-1.27	U	3.83	1.69	U	2.71
Radium-224 (Ra-224)	GA-01-R	NS	1.02		0.179	2.51		0.379	2.5		0.429	4.25		0.607	2.34		0.361	2.33		0.39	291		37.7	343		44.5
Radium-226* (Ra-226)	GA-01-R	5.18	0.769		0.173	0.381	U	0.126	0.916		0.29	1.37		0.32	0.996		0.286	1.37		0.318	**61.3**		**6.5**	**73.1**		**7.7**
Radium-228 (Ra-228)	GA-01-R	5.01	1.18		0.255	2.38		0.401	2.65		0.533	3.86		0.563	2.3		0.365	2.66		0.499	**286**		**29.3**	**331**		**33.9**
Thallium-208 (Tl-208)	GA-01-R	5.01	0.254	U	0.101	0.688		0.133	0.81		0.182	1.44		0.224	0.769		0.14	0.894		0.19	**99.6**		**10.4**	**114**		**11.9**
Thorium-234 (Th-234)	GA-01-R	5.18	0.361	U	0.757	0.459	U	1.59	1.19	U	1.02	-0.848	U	2.89	-0.601	U	2.13	-1.33	U	1.32	17.9	U	4.49	19.5	U	4.28

Notes:

START V: Superfund Technical Assessment & Response Team V

No.: Number, NA: Not Analyzed, NS: Not Specified,

U: Non-Detected, J: Estimated Result

Radium-226* analyzed via 21 days ingrowth

mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram

ICP-MS: Inductively Coupled Plasma-Mass Spectrometry

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)

Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP11-1218-01			789UMR-TP11-1824-01			789UMR-TP11-2430-01			789UMR-TP12-0002-01			789UMR-TP12-0204-01			789UMR-TP12-0406-01			789UMR-TP13-0006-01			789UMR-TP13-0612-01		
		Sample Date	8/25/2020			8/25/2020			8/25/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020			8/26/2020		
		Sample Depth (Inches)	12-18			18-24			24-30			0-2			2-4			4-6			0-6			6-12		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	26	J		22	J		24	J		22	J		23	J		8.4	J		17	J		0.61	J	
Uranium-233 (U-233)	ICP-MS	NS	0.015			0.014			0.014			0.013			0.016			0.015			0.015			0.013		
Uranium-234 (U-234)	ICP-MS	NS	0.015			0.014			0.014			0.013			0.016			0.015			0.015			0.013		
Uranium-235 (U-235)	ICP-MS	NS	0.34	J		0.33	J		0.23	J		0.5	J		0.14	J		0.019	UJ		0.13	J		0.088	J	
Uranium-236 (U-236)	ICP-MS	NS	0.015			0.014			0.014			0.013			0.016			0.015			0.015			0.013		
Uranium-238 (U-238)	ICP-MS	NS	46	J		43	J		31	J		67	J		19	J		2.4	J		16	J		12	J	
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	2.8	J		2.4	J		2.7	J		2.5	J		2.5	J		0.92	J		1.9	J		0.066	J	
Thorium-228 (Th-228)	A-01-R	NS	1,440		137	1,110		110	50.4		14	1,260		124	122		21.3	4.9		0.595	33.2		3	49.9		4.44
Thorium-230 (Th-230)	A-01-R	NS	235		32.8	178		28.1	27		9.77	233		34	41.2		11.4	1.88		0.319	6.25		0.716	8.13		0.911
Thorium-232 (Th-232)	A-01-R	NS	1,430		136	1,100		110	59.2		14.8	1,330		129	88.3		17.3	5.12		0.611	30.9		2.81	44.3		3.97
Uranium-233/234 (U-233/234)	A-01-R	5.18	**36**		**3.46**	**18.4**		**1.76**	**28.8**		**2.77**	**70**	**J**	**6.6**	**13.1**		**1.35**	0.769		0.216	**13.9**		**1.4**	**11.6**		**1.2**
Uranium-235/236 (U-235/236)	A-01-R	21.10	1.73		0.436	0.939		0.223	1.77		0.401	3.85	J	0.848	0.87	U	0.234	0.0561	U	0.0652	0.718	U	0.207	0.646	U	0.193
Uranium-238 (U-238)	A-01-R	5.18	**35.5**		**3.41**	**18.3**		**1.74**	**28.2**		**2.72**	**70.5**	**J**	**6.64**	**13.9**		**1.41**	0.976		0.242	**13.3**		**1.35**	**12**		**1.23**
Actinium-228 (Ac-228)	GA-01-R	5.01	**298**		**30.5**	**207**		**21.2**	**195**		**20**	**518**		**53**	**73.8**		**7.7**	4.94		0.784	**87.1**		**9.01**	**60.9**		**6.31**
Bismuth-212 (Bi-212)	GA-01-R	5.01	**302**		**32.2**	**224**		**25.4**	**202**		**21.8**	**519**		**55.2**	**77.4**		**10.7**	**7.17**		**1.64**	**86.9**		**9.78**	**67.7**		**8.44**
Bismuth-214 (Bi-214)	GA-01-R	NS	66.2		7.16	54.3		5.76	47.8		5.08	107		11.3	15.5		1.88	1.9		0.378	22.1		2.49	15.6		1.74
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.445	U	0.763	0.166	U	0.583	-0.373	U	0.542	0.59	U	1.15	-0.156	U	0.358	0.00671	U	0.137	-0.234	U	0.338	-0.217	U	0.318
Lead-212 (Pb-212)	GA-01-R	5.01	**311**		**40.2**	**215**		**27.9**	**207**		**26.8**	**502**		**64.9**	**80.9**		**10.5**	**5.66**		**0.689**	**94.2**		**12.2**	**66.9**		**8.7**
Lead-214 (Pb-214)	GA-01-R	NS	69.9		7.34	61		6.57	49.4		5.25	107		11.3	17		1.87	2.06		0.385	22.8		2.45	16.9		1.84
Potassium-40 (K-40)	GA-01-R	83.30	2.88	U	4.31	10.8		3.84	2.37	U	3.56	2.3	U	7.23	22.7		4.35	21.8		3.51	16		3.86	20		3.68
Protactinium-234M (Pa-234M)	GA-01-R	5.18	0.219	U	0.353	2.55		1.24	0.159	U	0.256	2.14	U	1.98	-0.149	U	0.348	0.0613	U	0.107	0.657	U	2	0.872	U	1.34
Radium-224 (Ra-224)	GA-01-R	NS	311		40.2	215		27.9	207		26.8	502		64.9	80.9		10.5	5.66		0.689	94.2		12.2	66.9		8.7
Radium-226* (Ra-226)	GA-01-R	5.18	**66.2**		**7.16**	**54.3**		**5.76**	**47.8**		**5.08**	**107**		**11.3**	**15.5**		**1.88**	1.9		0.378	**22.1**		**2.49**	**15.6**		**1.74**
Radium-228 (Ra-228)	GA-01-R	5.01	**298**		**30.5**	**207**		**21.2**	**195**		**20**	**518**		**53**	**73.8**		**7.7**	4.94		0.784	**87.1**		**9.01**	**60.9**		**6.31**
Thallium-208 (Tl-208)	GA-01-R	5.01	**102**		**10.6**	**73.6**		**7.72**	**67.2**		**7.04**	**184**		**19.2**	**25.2**		**2.71**	2.04		0.315	**29.8**		**3.14**	**21.2**		**2.25**
Thorium-234 (Th-234)	GA-01-R	5.18	18.9	U	4.13	13.7	U	3.53	13	U	3.48	19.8	U	4.94	5.51	U	1.88	2.28	U	1.54	8.36	U	2.4	3.37	U	1.37

Notes:

START V: Superfund Technical Assessment & Response Team V

No.: Number, NA: Not Analyzed, NS: Not Specified,

U: Non-Detected, J: Estimated Result

Radium-226* analyzed via 21 days ingrowth

mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram

ICP-MS: Inductively Coupled Plasma-Mass Spectrometry

[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)

Result equals or exceeds the EPA SSAL

Table 9: Validated Soil Analytical Results - Radiochemistry Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 2020

		START V Sample No.	789UMR-TP13-1218-01			789UMR-TP13-1824-01		
		Sample Date	8/26/2020			8/26/2020		
		Sample Depth (Inches)	12-18			18-24		
		Sample Matrix	Soil/Rock/Slag			Soil/Rock/Slag		
Radioisotope	**Analytical Method**	**[1]EPA SSAL (mg/kg)**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**	**Result (mg/kg)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	20	J		19	J	
Uranium-233 (U-233)	ICP-MS	NS	0.015			0.014		
Uranium-234 (U-234)	ICP-MS	NS	0.015			0.014		
Uranium-235 (U-235)	ICP-MS	NS	0.2	J		0.16	J	
Uranium-236 (U-236)	ICP-MS	NS	0.015			0.014		
Uranium-238 (U-238)	ICP-MS	NS	27	J		22	J	
Radioisotope	**Analytical Method**	**[1]EPA SSAL (pCi/g)**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**	**Result (pCi/g)**	**Qualifier**	**Total Uncertainty**
Thorium (Th)	ICP-MS	NS	2.2	J		2	J	
Thorium-228 (Th-228)	A-01-R	NS	711		75.9	91.4		10.7
Thorium-230 (Th-230)	A-01-R	NS	146		24.5	18.5		3.7
Thorium-232 (Th-232)	A-01-R	NS	692		74.1	98.8		11.3
Uranium-233/234 (U-233/234)	A-01-R	5.18	**20**		**1.98**	**18.6**		**1.85**
Uranium-235/236 (U-235/236)	A-01-R	21.10	0.969	U	0.274	0.909	U	0.258
Uranium-238 (U-238)	A-01-R	5.18	**20**		**1.98**	**18.6**		**1.85**
Actinium-228 (Ac-228)	GA-01-R	5.01	**88.8**		**9.14**	**72.8**		**7.53**
Bismuth-212 (Bi-212)	GA-01-R	5.01	**91.4**		**10.2**	**77.5**		**8.96**
Bismuth-214 (Bi-214)	GA-01-R	NS	21		2.28	18.3		2.03
Cesium-137 (Cs-137)	GA-01-R	28.40	-0.228	U	0.329	0.186	U	0.269
Lead-212 (Pb-212)	GA-01-R	5.01	**94.1**		**12.2**	**77.3**		**10**
Lead-214 (Pb-214)	GA-01-R	NS	22.5		2.43	19.5		2.09
Potassium-40 (K-40)	GA-01-R	83.30	4.77		2.17	12.5		2.95
Protactinium-234M (Pa-234M)	GA-01-R	5.18	-0.68	U	1.99	0.593	U	1.11
Radium-224 (Ra-224)	GA-01-R	NS	94.1		12.2	77.3		10
Radium-226* (Ra-226)	GA-01-R	5.18	**21**		**2.28**	**18.3**		**2.03**
Radium-228 (Ra-228)	GA-01-R	5.01	**88.8**		**9.14**	**72.8**		**7.53**
Thallium-208 (Tl-208)	GA-01-R	5.01	**30.4**		**3.22**	**24.8**		**2.63**
Thorium-234 (Th-234)	GA-01-R	5.18	4.78	U	1.55	6.43	U	2.05

Notes:
START V: Superfund Technical Assessment & Response Team V
No.: Number, NA: Not Analyzed, NS: Not Specified,
U: Non-Detected, J: Estimated Result
Radium-226* analyzed via 21 days ingrowth
mg/kg: Milligrams per kilogram, pCi/g: Picocuries per gram
ICP-MS: Inductively Coupled Plasma-Mass Spectrometry
[1]U.S. Environmental Protection Agency (EPA) Site-Specific Action Levels (SSALs)
Result equals or exceeds the EPA SSAL

ATTACHMENT C

Chains of Custody Record

USEPA

DateShipped: 8/12/2020

CarrierName: FedEx

AirbillNo: 7712 3676 1617

CHAIN OF CUSTODY RECORD

Case #: 630

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081120-0036-0019-01

Lab: Eurofins TestAmerica Laboratories, Inc.

Lab Contact: Mike Franks

Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP01-1218-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	08:50	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP02-0006-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	09:50	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP02-0612-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	09:55	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP02-1218-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	10:00	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP02-1824-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	10:05	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP02-2430-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	10:10	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 ~~3050B~~ & 6020A
	789UMR-TP03-0015-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	11:40	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP03-0026-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	11:55	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP03-1526-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	11:45	2	16 oz glass	None	Y	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP03-1526-02	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	11:48	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A

Special Instructions: Analyze samples for gamma spectroscopy for Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 day ingrowth, and alpha spectroscopy for uranium U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
16/Analysis	Bernard Nwosu Weston START IV	8/12/20			

USEPA

DateShipped: 8/12/2020

CarrierName: FedEx

AirbillNo: 7712 3676 1617

CHAIN OF CUSTODY RECORD

Case #: 630

Contact Name: Bernard Nwosu

Contact Phone: 908-565-2980

No: 2-081120-0036-0019-01

Lab: Eurofins TestAmerica Laboratories, Inc.

Lab Contact: Mike Franks

Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP04-0006-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	14:40	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP04-0612-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	14:45	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP04-1218-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	14:50	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP04-1824-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	14:55	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP04-2430-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	15:00	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A
	789UMR-TP04-3648-01	Gamma/Alpha/ICPMS	Soil/Rock/Slag	8/11/2020	15:10	1	16 oz glass	None	N	EPA 901.1, HASL300 A-01-R, SW846 3050B & 6020A

Special Instructions: Analyze samples for gamma spectroscopy for Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. other gamma emitting radioisotopes including Cs-137 and K-40, and Ra-226 using Bi-214 and/or Pb-214 homogenized for 21 day ingrowth, and alpha spectroscopy for uranium U-233/234, U-235/236, U-238, Th-230, Th-232, and Th-228. Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
16/Analysis	[signature] Weston START V	8/12/20			

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 12AUG20
ACTWGT: 20.00 LB
CAD: 107461656/INET4280
DIMS: 23x15x15 IN

BILL SENDER

TO **MIKE FRANKS**
EUROFINS TESTAMERICA LABORATORIES,
13715 RIDER TRAIL NORTH

EARTH CITY MO 63045
(314) 787-8201 REF: 40200.021.036.2019
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express

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USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
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CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-01
Lab: Eurofins TestAmerica Labs, Inc.
Lab Contact: Mike Franks
Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP05-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	11:20	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	12:36	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	12:45	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	13:05	2	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-1824-02	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	13:07	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-2430-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	13:10	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-3036-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	13:18	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP05-3654-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	13:40	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP06-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	09:30	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP06-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	10:25	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A

Special Instructions: Analyze samples by gamma spectroscopy for Ra-226 using Bi-214 and/or Pb-214 (homogenized for 21 day ingrowth), Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40. Alpha spectroscopy for isotopic uranium (U-233/234, U-235/236, U-238) and isotopic thorium (Th-230, Th-232, and Th-228) by A-01-R and 6020 (ICP-MS).

Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, lisichenko.peter@epa.gov.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
94/Analyses	[signature] Weston START V	8/27/20			

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7358-2363

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-01
Lab: Eurofins TestAmerica Labs, Inc.
Lab Contact: Mike Franks
Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP06-1216-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	10:40	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP07-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	14:20	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP07-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	14:28	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP07-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	14:40	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP07-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	14:48	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP07-2428-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	15:50	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP08-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	11:45	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP08-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	11:54	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP08-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	12:00	2	16 oz glass	None	Y	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP08-1218-02	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	12:05	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A

Special Instructions: Analyze samples by gamma spectroscopy for Ra-226 using Bi-214 and/or Pb-214 (homogenized for 21 day ingrowth), Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40. Alpha spectroscopy for isotopic uranium (U-233/234, U-235/236, U-238) and isotopic thorium (Th-230, Th-232, and Th-228) by A-01-R and 6020 (ICP-MS).

Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, lisichenko.peter@epa.gov.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
44/Analyses	[signature] Weston START V	8/27/20			

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7358-2363

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-01
Lab: Eurofins TestAmerica Labs, Inc.
Lab Contact: Mike Franks
Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP08-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	12:15	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP08-3032-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	13:50	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP09-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	10:33	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP09-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	10:38	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP09-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	10:46	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP09-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	10:54	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP10-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	09:35	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP10-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	09:42	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP10-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	09:51	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP10-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	09:58	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A

Special Instructions: Analyze samples by gamma spectroscopy for Ra-226 using Bi-214 and/or Pb-214 (homogenized for 21 day ingrowth), Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40. Alpha spectroscopy for isotopic uranium (U-233/234, U-235/236, U-238) and isotopic thorium (Th-230, Th-232, and Th-228) by A-01-R and 6020 (ICP-MS).

Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, lisichenko.peter@epa.gov.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
44/Analyses	Bernard Nwosu Weston START V	8/27/20			

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7358-2363

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-01
Lab: Eurofins TestAmerica Labs, Inc.
Lab Contact: Mike Franks
Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP11-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	16:05	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP11-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	16:07	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP11-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	16:10	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP11-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	16:15	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP11-2430-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/25/2020	16:25	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP12-0002-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	08:45	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP12-0204-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	08:50	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP12-0406-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	08:55	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP13-0006-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	14:50	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP13-0612-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	14:55	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A

Special Instructions: Analyze samples by gamma spectroscopy for Ra-226 using Bi-214 and/or Pb-214 (homogenized for 21 day ingrowth), Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40. Alpha spectroscopy for isotopic uranium (U-233/234, U-235/236, U-238) and isotopic thorium (Th-230, Th-232, and Th-228) by A-01-R and 6020 (ICP-MS).

Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, lisichenko.peter@epa.gov.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
44/Analyses	Bernard Nwosu Weston START V	8/27/20			

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7358-2363

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-01
Lab: Eurofins TestAmerica Labs, Inc.
Lab Contact: Mike Franks
Lab Phone: 314-787-8201

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP13-1218-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	14:59	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A
	789UMR-TP13-1824-01	Gamma Spec/Alpha Spec/ICP-MS	Soil/Rock/Slag	8/26/2020	15:05	1	16 oz glass	None	N	901.1M/GA-01-R, A-01-R, 6020A

Special Instructions: Analyze samples by gamma spectroscopy for Ra-226 using Bi-214 and/or Pb-214 (homogenized for 21 day ingrowth), Th-234, Pa-234 or Pa-234m, Pb-214, and Bi-214 from the uranium decay chain. Ra-228 and/or Ac-228, Ra-224, Pb-212, Bi-212, and Tl-208 from the thorium decay chain. Other gamma emitting radioisotopes including Cs-137 and K-40. Alpha spectroscopy for isotopic uranium (U-233/234, U-235/236, U-238) and isotopic thorium (Th-230, Th-232, and Th-228) by A-01-R and 6020 (ICP-MS).

Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, lisichenko.peter@epa.gov.

SAMPLES TRANSFERRED FROM

CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
44/Analyses	Bernard Nwosu Weston STARTV	8/27/20			

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 27AUG20
ACTWGT: 40.00 LB
CAD: 107461656/INET4280
DIMS: 23x15x15 IN
BILL SENDER

TO **MIKE FRANKS**
EUROFINS TESTAMERICA LABORATORIES,
13715 RIDER TRAIL NORTH

EARTH CITY MO 63045
(314) 787-8201 REF: 40200.021.036.2019
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express
J202020071401uv

1 of 2
TRK# 0201 **7713 7358 2363**
MASTER

FRI - 28 AUG 3:00P
STANDARD OVERNIGHT

NA ALNA

63045
MO-US **STL**

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ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 27AUG20
ACTWGT: 40.00 LB
CAD: 107461656/INET4280
DIMS: 23x15x15 IN

BILL SENDER

TO **MIKE FRANKS**
EUROFINS TESTAMERICA LABORATORIES,
13715 RIDER TRAIL NORTH

EARTH CITY MO 63045
(314) 787-8201 REF: 40200.021.036.2019
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express

E

J202020071401uv

2 of 2

FRI - 28 AUG 3:00P
STANDARD OVERNIGHT

MPS# 0263 **7713 7358 2455**
Mstr# 7713 7358 2363

0201

63045
NA ALNA
MO-US **STL**

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USEPA
DateShipped: 8/26/2020
CarrierName: FedEx
AirbillNo: 7713-5827-0902

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082520-0036-0019-01
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP01-01	TCLP VOCs	Soil/Rock/Slag	8/25/2020	17:05	5	25g Encore	4 C	Y	SW826 8260C
	789UMR-DSP01-02	TCLP VOCs	Soil/Rock/Slag	8/25/2020	17:10	3	25g Encore	4 C	N	SW826 8260C
	789UMR-TP07-1218-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	14:40	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP07-1218-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	14:40	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP08-1824-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	12:15	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP08-1824-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	12:15	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-0006-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:05	1	4 oz glass jar	4 C	Y	SW846 8260C
	789UMR-TP11-0006-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:05	6	5g Encore	4 C	Y	SW846 8260C
	789UMR-TP11-0006-02	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:07	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-0006-02	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:07	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-0612-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:07	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-0612-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:07	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-2430-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:25	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-2430-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:25	3	5g Encore	4 C	N	SW846 8260C

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
35/Analyses	Bernard Nwosu Weston START V	8/25/20			

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 25AUG20
ACTWGT: 10.00 LB
CAD: 107461656/NET4280
DIMS: 18x15x18 IN

BILL SENDER

TO **KURT HUMMLER**
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
SUITE 1
MOUNTAINSIDE NJ 07092
(908) 728-3143
INV:
PO:
REF: 40200021.036.2019
DEPT:

56BJ2/7709/B766

J202020071401uv

FedEx Express

WED - 26 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0201 **7713 5827 0902**

E2 KBCA

07092
NJ-US **EWR**

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USEPA
DateShipped: 8/26/2020
CarrierName: FedEx
AirbillNo: 7713-6910-1550

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082620-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP02-01	TCLP VOCs	Soil/Rock/Slag	8/26/2020	15:25	3	25g Encore	4 C	Y	SW826 8260C
	789UMR-TP05-0612-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	12:36	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-0612-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	12:36	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-1218-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	12:45	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-1218-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	12:45	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-1824-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	13:05	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-1824-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	13:05	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-3036-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	13:18	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-3036-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	13:18	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP06-0006-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	09:30	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP06-0006-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	09:30	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP12-0002-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	08:45	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP12-0002-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	08:45	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP13-0612-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	14:55	3	5g Encore	4 C	N	SW846 8260C

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
31 / Analyses	Bernard Nwosu Weston START V	08/26/20			

USEPA
DateShipped: 8/26/2020
CarrierName: FedEx
AirbillNo: 7713-6910-1550

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082620-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP13-0612-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	14:55	1	4 oz glass jar	4 C	N	SW846 8260C

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov	**SAMPLES TRANSFERRED FROM**
	CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
31/Analyses	Weston START V	08/26/20			

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 26AUG20
ACTWGT: 10.00 LB
CAD: 107461656/INET4280
DIMS: 18x15x18 IN
BILL SENDER

TO KURT HUMMLER
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
SUITE 1
MOUNTAINSIDE NJ 07092
(908) 728-3143 REF: 40200.021.036.2019
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express

J202020071401uv

THU - 27 AUG 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7713 6910 1550

E2 KBCA

07092
NJ-US EWR

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L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP01-01	RCRA Characteristics	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP01-01	TCLP Herbicides	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8151A
	789UMR-DSP01-01	TCLP Metals + Hg	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 6010D
	789UMR-DSP01-01	TCLP Pesticide	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8081B
	789UMR-DSP01-01	TCLP SVOCs	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8270D
	789UMR-DSP01-02	RCRA Characteristics	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP01-02	TCLP Herbicides	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-DSP01-02	TCLP Metals + Hg	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 6010D
	789UMR-DSP01-02	TCLP Pesticide	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8081B
	789UMR-DSP01-02	TCLP SVOCs	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8270D
	789UMR-DSP02-01	RCRA Characteristics	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	~~Y~~ N BW	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP02-01	TCLP Herbicides	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	~~Y~~ N BW	SW826 8151A
	789UMR-DSP02-01	TCLP Metals + Hg	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	~~Y~~ N BW	SW826 6010D
	789UMR-DSP02-01	TCLP Pesticide	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	~~Y~~ N BW	SW826 8081B
	789UMR-DSP02-01	TCLP SVOCs	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	~~Y~~ N BW	SW826 8270D
	789UMR-TP05-0612-01	Herbicides	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW826 8151A

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
21/Analyses	Stephen B[illegible] weston STARTV	8/27/2020 11:00	[illegible]	10:15 8-28-20	IR-Gun# 4.1°C, 4.2°C

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP05-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-0612-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-1218-01	Herbicides	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-1218-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-1218-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-1218-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-1824-01	Herbicides	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-1824-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-1824-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-1824-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-3036-01	Herbicides	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-3036-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-3036-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-3036-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP06-0006-01	Herbicides	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP06-0006-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP06-0006-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP06-0006-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW846 8270D

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
19/Analyses	Stephen Weston START	8/27/2020 11:00		10:15 8-28-20	IR-Gun #1 4.1°, 4.2°

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP07-1218-01	Herbicides	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP07-1218-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP07-1218-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP07-1218-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP08-1824-01	Herbicides	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP08-1824-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP08-1824-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP08-1824-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-0006-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW826 8151A
	789UMR-TP11-0006-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW846 6010D
	789UMR-TP11-0006-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW826 8081B/8081A
	789UMR-TP11-0006-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW846 8270D
	789UMR-TP11-0006-02	Herbicides	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-0006-02	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-0006-02	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP11-0006-02	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-0612-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8081B/8081A

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
23/Analyses	Stephen Weston START V	8/27/2020 11:00	[illegible]	10:15 8-28-20	IR-Gun #1 4.1, 4.2

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP11-0612-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-2430-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-2430-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-2430-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP11-2430-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP12-0002-01	Herbicides	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP12-0002-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP12-0002-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP12-0002-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP13-0612-01	Herbicides	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP13-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP13-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP13-0612-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW846 8270D

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
13/Analysis	Weston STARTV	8/27/2020 11:00		10:15 8-28-20	IR-Gun #1 4.1; 4.2

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 27AUG20
ACTWGT: 40.00 LB
CAD: 10746156/INET4280
DIMS: 23x15x15 IN

BILL SENDER

TO **KURT HUMMLER**
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
SUITE 1
MOUNTAINSIDE NJ 07092
(908) 728-3143
INV:
PO:
REF: 40200.021.036.2019
DEPT:

FedEx Express

J202020071401uv

568J2/7709/B766

FRI - 28 AUG 10:30A
PRIORITY OVERNIGHT

1 of 2

TRK# 0201 **7713 7369 3249**

MASTER

E2 KBCA

07092
NJ-US **EWR**

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

Warning: Use only the printed original label for shipping. Using a photocopy of this label for shipping purposes is fraudulent and could result in additional billing charges, along with the cancellation of your FedEx account number.
Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ORIGIN ID:LDJA (732) 585-4413
BERNARD NWOSU
WESTON SOLUTIONS, INC.
1090 KING GEORGES POST ROAD
SUITE 201
EDISON, NJ 08837
UNITED STATES US

SHIP DATE: 27AUG20
ACTWGT: 40.00 LB
CAD: 107461656/INET4280
DIMS: 23x15x15 IN

BILL SENDER

TO **KURT HUMMLER**
CHEMTECH CONSULTING GROUP
284 SHEFFIELD STREET
SUITE 1
MOUNTAINSIDE NJ 07092
(908) 728-3143 REF: 40200.021.036.2019
INV:
PO: DEPT:

56BJ2/7709/B766

FedEx Express

J202020071401uv

FRI - 28 AUG 10:30A
PRIORITY OVERNIGHT

2 of 2
MPS# 0263 **7713 7369 2996**
Mstr# 7713 7369 3249 0201

E2 KBCA

07092
NJ-US EWR

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Use of this system constitutes your agreement to the service conditions in the current FedEx Service Guide, available on fedex.com.FedEx will not be responsible for any claim in excess of $100 per package, whether the result of loss, damage, delay, non-delivery,misdelivery,or misinformation, unless you declare a higher value, pay an additional charge, document your actual loss and file a timely claim.Limitations found in the current FedEx Service Guide apply. Your right to recover from FedEx for any loss, including intrinsic value of the package, loss of sales, income interest, profit, attorney's fees, costs, and other forms of damage whether direct, incidental,consequential, or special is limited to the greater of $100 or the authorized declared value. Recovery cannot exceed actual documented loss.Maximum for items of extraordinary value is $1,000, e.g. jewelry, precious metals, negotiable instruments and other items listed in our ServiceGuide. Written claims must be filed within strict time limits, see current FedEx Service Guide.

ATTACHMENT D

Photographic Documentation Log

Photographic Documentation Log
789 Upper Mountain Road
Lewiston, Niagara County, New York
August 11 through 12, 2020 and August 25 through 26, 2020

Photograph 1: On August 11, 2020, and August 25, thorough 26, 2020, the U.S. Environmental Protection Agency, Region II (EPA) and Weston Solutions Inc., Superfund Technical Assessment & Response Team V (START V) conducted Removal Assessment sampling events at the 789 Upper Mountain Road Site (the Site). Prior to mobilizing to the Site, Dig Safely New York was contacted to mark out and flag the locations of existing subsurface public utilities at the Site.

Photograph 2: As part of the Removal Assessment, test pits were advanced at locations throughout the Site and soil samples were collected from the test pits for laboratory analysis. Above is a view of the background test pit 789UMR-TP01 located in the rear northeast corner of the property. Surface gamma reading was 15–18 microroentgen per hour (µR/hr).

Photograph 3: Using a mini excavator, test pits were advanced to varying depths up to native soil at selected locations throughout the Site. Above is a view of 789UMR-TP02 behind the property building along the northwest fence line. Surface gamma reading was 65-80 µR/hr.

Photograph 4: View of 789UMR-TP03 located behind the property building along the west fence line. Test pit contained debris, including refractory bricks and fragments of broken sewer pipe. Surface gamma reading was 220–260 µR/hr.

Photograph 5: View of 789UMR-TP04 located behind the residence, adjacent to the rear deck. Test pit contained lots of refractory bricks, white nodules, and some glass shimmer fragments. Surface gamma reading was 220–260 µR/hr.

Photograph 6: View of the exterior east and north walls of the residence. The EPA On-scene Coordinator (OSC) used a fluke photoionization chamber (FPIC) to screen the wall for gamma radiation. Readings were a background level.

Photograph 7: View of 789UMR-TP05 located behind the residence adjacent to 789UMR-TP04. Surface gamma reading was 433-435 µR/hr.

Photograph 8: View of 789UMR-TP05. Note 10-inch blocks found in the test pit.

Photograph 9: View of 789UMR-TP06 located on the east side of the property. Refusal was encountered at 16 inches below ground surface (bgs), possible bedrock. Surface gamma reading was 51-53 µR/hr.

Photograph 10: View of 789UMR-TP07, front of the property, just next to the driveway. Surface gamma reading was 187-190 µR/hr.

Photograph 11: View of 789UMR-TP08, front of property. Surface gamma reading was 68-70 µR/hr.

Photograph 12: View of 789UMR-TP09. Surface gamma reading was 14-16 µR/hr. A Ludlum-2241 and 3x3 sodium iodide (NaI) scintillator were used to screen the test pits for gamma radiation prior to, during, and after excavation.

Photograph 13: View of START V personnel collecting soil sample from 789UMR-TP10. Surface gamma reading was 18-22 µR/hr.

Photograph 14: View of 789UMR-TP11 located on the west side of the property. Note surface gamma reading on Ludlum-2241 at 807 µR/hr.

Photograph 15: View of 789UMR-TP12 in a dirt crawl space under the property building. Surface gamma reading was 428-430 µR/hr.

Photograph 16: View of 789UMR-TP13 behind the residence. Surface gamma reading was 47-49 µR/hr.

Photograph 17: View of the rear deck. The EPA OSC and STARTV completed a grided gamma scan of the rear deck surface. Area of the rear deck in proximity to 789UMR-TP04 and 789UMR-TP05 had gamma readings in the range of 80-620 µR/hr.

Photograph 18: View of the mini excavator after decontamination and wipe sample collection. Wipe samples were analyzed by the EPA OSC using Ludlum-3030. Wipe sample results indicated proper decontamination of the excavator.

ATTACHMENT E

Data Validation Report

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837-3703
Phone: 732-585-4400
www.westonsolutions.com

SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

START V-02-F-0016

TRANSMITTAL MEMO

To:	Mr. Peter Lisichenko, On-Scene Coordinator Superfund and Emergency Management Division U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer START V, Region II
Subject:	789 Upper Mountain Road Site Data Validation Assessment
Date:	August 31, 2020

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

  Radon Testing 11 Samples

- Matrices and Number of Samples

  Indoor Air 8 Samples
  Field Blank 3 Samples

- Sampling Dates: August 10, through 13, 2020

The final data assessment narrative and original analytical data package are attached.

cc:	START V SPM:	Bernard Nwosu
	START V SITE FILE TD #:	TO-0036-0019
	START V ANALYTICAL TD #:	TO-0036-0054
	TASK#:	2054

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **August 31, 2020**

TO: **Peter Lisichenko, On-Scene Coordinador**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
START V Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to EPA standards for compliance. Measures for the following general areas were evaluated as applicable:

Field Blanks	Laboratory Blanks
Field Duplicates	Blanks
Data Completeness	Continuous Radon Monitor (CRM)

Any statistical measures used to support the following conclusions are attached so that the review may be reviewed by others.

Summary of Results

Radon Testing

Acceptable as Submitted	X
Acceptable with Comments	
Unacceptable, Action Pending	
Unacceptable	

Data Reviewed by: Smita Sumbaly Date: 8/31/2020

Approved By: [signature] Date: 8/31/2020

Area Code/Phone No.: (732) 585-4410

NARRATIVE

RFP#/TASK No. – 631/2054

SITE NAME: **789 Upper Mountain Road Site**
Lewiston
Niagara County
New York

Laboratory Name: Accu-View Property Inspection, Inc., P.O. Box 641, East Amherst, NY 14051 (deploy and retrieve canisters) and Radon Testing Corporation of America (RTCA), 2 Hayes Street, Elmsford, NY 10523 (Radon Testing).

INTRODUCTION:

The laboratory's portion of this case consisted of 11 air samples, including one field blank, one office blank, one blank, and field duplicate for radon testing. All samples were collected on August 10 through 13, 2020.

The laboratory reported no problem(s) with the receipt of these samples:

The laboratory reported no problems with the analyses of Radon Testing.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Appropriate Form Is and Chain of Custody have been copied from the original data package and appended to the data assessment narrative for reference.

Inorganic Data Review Narrative

Site: 789 Upper Mountain Road Site	**RFP# 630**
Sampling Team: Accu-View Property Inspection Inc. **Laboratory: Radon Testing Corporation of America**	**TASK # 2054**
Reviewer: Smita Sumbaly	**Matrix: 11 Air**

Data Case Description:

On August 10 through 13, 2020, under oversight of the U. S. Environmental Protection Agency, Region II (EPA) On-Scene Coordinator (OSC), Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V) subcontracted New York-certified radon technician from Accu-View Property Inspection Inc., collected 11 radon samples, including one field duplicate, one field blank, one office blank, one blank, from the 789 Upper Mountain Road Site located at 789 Upper Mountain Road, Lewiston, Niagara County, New York. Charcoal Canisters were deployed by the radon technician on August 10, 2020 and retrieved on August 13, 2020. After retrieving the samples, the radon technician shipped all 11 radon samples to Radon Testing Corporation of America (RTCA) located at 2 Hayes Street, Elmsford, New York, for radon testing.

The 11 air samples, including one field duplicate, one field blank, one office blank, one blank, were collected for radon testing utilizing activated charcoal canisters (ACC) which were deployed over a 72 hour period of time. The co-located ACC's were placed side-by-side, approximately 4 inches apart.

The placement of the ACCs was performed by the radon technician in accordance with the guidelines presented in the American National Standards Institute (ANSI)/American Association of Radon Scientists and Technologists (AARST) *Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings* (MAMF 2012) and as directed by the EPA OSC. All radon testing were performed in accordance with the EPA protocol for the analysis of radon in air (EPA 402-R-92-004) and RTCA standard operation procedure (SOP) for radon in air.

All radon testing were performed in accordance with the EPA protocol for the analysis of radon in air (EPA 402-R-92-004) and RTCA standard operation procedure (SOP) for radon in air. The placement of the ACC's was conducted in accordance with Weston's instructions to Accu-View Property Inspection Inc. The radon technician also set-up a Radalink AirCat Continuous Blind Radon Monitor in the living room and the finished basement of the residence located on the Site - Continuous Radon Monitors use an electronic detector to accumulate and store information related to the periodic average concentration of radon gas or radon decay products. They are activated and left on site for approximately 72 hours period of time. The radon technician reported average radon concentrations at 1.9 picoCuries per liter (pCi/L) for the living room and 6.7 pCi/L for the finished basement.

Client identification (ID) and laboratory ID numbers are as follows:

Canisters ID Number	Sample Location	Canister Type	Analysis	Canisters Deployed	Canisters Retrieved
789 Upper Mountain Road					
2856649	2nd FL=Mstr Bed Rm	Charcoal Canister	Radon Testing	08/10/2020 @ 14:02	08/13/2020 @ 13:59
2856720	2nd FL=Mstr Bed Rm BL		Radon Testing	08/10/2020 @ 14:02	08/13/2020 @ 13:59
2856642	2nd FL=Office/Bed Rm		Radon Testing	08/10/2020 @ 14:10	08/13/2020 @ 14:02
2856647	2nd FL=Guest Rm		Radon Testing	08/10/2020 @ 14:12	08/13/2020 @ 14:03
2856648	1st FL=LR SE		Radon Testing	08/10/2020 @ 14:23	08/13/2020 @ 14:08
2856656	1st FL=Kitchen/Dining Area		Radon Testing	08/10/2020 @ 14:28	08/13/2020 @ 14:10
2856657	Bsmt=SE End		Radon Testing	08/10/2020 @ 14:40	08/13/2020 @ 14:16
2856636	Bsmt=SE End BL		Radon Testing	08/10/2020 @ 14:40	08/13/2020 @ 14:16
2856628	Crawl Space DP		Radon Testing	08/10/2020 @ 14:48	08/13/2020 @ 14:22
2856652[1]	Crawl Space DP		Radon Testing	08/10/2020 @ 14:48	08/13/2020 @ 14:22
2856702	BLANK		Radon Testing	08/10/2020 @ 14:48	08/13/2020 @ 14:25

[1] A duplicate of canister # 2856628

FL - Floor
Bed-Bedroom
Rm – Room
SE - South East
Mstr – Master
DP - Duplicate
LR – Living Room
Bsmt - Basement
BL - Blank

A.2.3.3 Technical Review:

All samples were reviewed for the following quality control (QC) parameters. All QC results were evaluated, but only non-compliant QC observations, if any, are discussed in detail in this report.

- Field Duplicate
- Field Blank
- Continuous Radon Monitor (CRM)

Field Duplicate:

Canisters ID Number	Sample Result (D1)	Field Duplicate Canister Number	Field duplicate Result (D2)	Average (M)	RPD
2856628	11.0 pCi/L	2856652	10.9 pCi/L	10.95 pCi/L	0.91%

According to Protocol for Conducting Radon and Radon Decay Product Measurements in Multifamily Buildings, duplicate samples were deployed at a rate of one per unit of the measurement location. Duplicate pairs of measurements greater than or equal to 4.0 pCi/L should produce a Relative Percent Difference (RPD) greater than 36% no more than 1% of the time. In the above field duplicate pairs all the samples and duplicates measurements are less than the 4.0 pCi/L. Therefore, no action was required.

Also, if one duplicate is equal to or greater than 4.0 pCi/L and the other below, the higher result may not be twice or more than the other. In the above field duplicate pairs, both sample and duplicate results are above 4.0 pCi/L, the precision of the duplicate measurement is acceptable.

RPD = [(D1-D2)/(D1 + D2/2)] X 100%

Field Blanks

Canisters ID Number	Sample Location	Blank Concentration	QC Limit
2856720	2nd FL = Master Bed Rm	0.1 pCi/L	<4.0 pCi/L
2856636	Bsmt=SE End	0.2 pCi/L	<4.0 pCi/L
2856702	Blank	0.2 pCi/L	<4.0 pCi/L

Field blanks measurements are well below 4.0 pCi/L, so no qualification was required.

Continuous Radon Monitor (CRM)

The average radon level measured for CRM was 1.9 pCi/L for living room and 6.7 pCi/L for finished basement.

Radon concentrations in eight of the 11 samples were reported below the EPA action level of 4.0 pCi/L and radon concentrations in three samples were reported above the EPA action level of 4.0 pCi/L.

Contract Problems/Non-Compliance:

None

Reviewer's Signature: Smita Sumbaly **Date:** 8/31/2020

Verified By: **Date:** 8/31/2020

Analytical Data Summary Table - Radon Testing
789 Upper Mountain Road Site
Sampling Dates: August 10 through 13, 2020

Canisters ID Number	Sample Location	Canister Type	Analysis	Radon Level
789 Upper Mountain Road				
2856649	2nd FL=Mstr Bed Rm	Charcoal Canister	Radon Testing	1.8 pCi/L
2856720	2nd FL=Mstr Bed Rm BL	Charcoal Canister	Radon Testing	0.1 pCi/L
2856642	2nd FL=Office/Bed Rm	Charcoal Canister	Radon Testing	1.6 pCi/L
2856647	2nd FL=Guest Rm	Charcoal Canister	Radon Testing	2.1 pCi/L
2856648	1st FL=LR SE	Charcoal Canister	Radon Testing	2.2 pCi/L
2856656	1st FL=Kitchen/Dining Area	Charcoal Canister	Radon Testing	2.3 pCi/L
2856657	Bsmt=SE End	Charcoal Canister	Radon Testing	**7.0 pCi/L**
2856636	Bsmt=SE End BL	Charcoal Canister	Radon Testing	0.2 pCi/L
2856628	Crawl Space DP	Charcoal Canister	Radon Testing	**11.0 pCi/L**
2856652*	Crawl Space DP	Charcoal Canister	Radon Testing	**10.9 pCi/L**
2856702	BLANK	Charcoal Canister	Radon Testing	0.2 pCi/L

* A duplicate of (co-located with) canister# 2856628
pCi/L - picoCuries per liter

FL - Floor
Bed-Bedroom
LR - Living Room

Mstr - Master
BL - Blank
Rm - Room

SE - South East
DP - Duplicate
Bsmt - Basement

ACCU-VIEW PROPEET INSPECTIONS, INC.
Mr. Richard PezzinoAccu-View property Inspector
Test Location: 789 Upper Mountain Road, Lewiston, NY 14092

Canister ID Number:	Radon Level :	Error for Measurement is:	Test Start :	Canister Type :	Test Stop :	Location :	Received:	Analyzed:
2856649	1.8 pCi/L	± 0.2 pCi/L	08/10/2020 @ 14:02	Charcoal Canister 4 inch	08/13/2020 @ 13:59	2nd FL=Mstr Bed Rm	08/18/2020 @ 08:04	08/18/2020 @ 12:55
2856720	0.1 pCi/L	± 0.2 pCi/L	08/10/2020 @ 14:02	Charcoal Canister 4 inch	08/13/2020 @ 13:59	2nd FL=Mstr Bed Rm BL	08/18/2020 @ 08:04	08/18/2020 @ 12:56
2856642	1.6 pCi/L	± 0.2 pCi/L	08/10/2020 @ 14:10	Charcoal Canister 4 inch	08/13/2020 @ 14:02	2nd FL=Office/Bed Rm	08/18/2020 @ 08:04	08/18/2020 @ 12:56
2856647	2.1 pCi/L	± 0.2 pCi/L	08/10/2020 @ 14:12	Charcoal Canister 4 inch	08/13/2020 @ 14:03	2nd FL=Guest Rm	08/18/2020 @ 08:04	08/18/2020 @ 12:55
2856648	2.2 pCi/L	± 0.3 pCi/L	08/10/2020 @ 14:23	Charcoal Canister 4 inch	08/13/2020 @ 14:08	1st FL=LR SE	08/18/2020 @ 08:04	08/18/2020 @ 12:55
2856656	2.3 pCi/L	± 0.3 pCi/L	08/10/2020 @ 14:28	Charcoal Canister 4 inch	08/13/2020 @ 14:10	1st FL=Kitchen/Dining Area	08/18/2020 @ 08:04	08/18/2020 @ 12:48
2856657	**7.0 pCi/L**	± 0.4 pCi/L	08/10/2020 @ 14:40	Charcoal Canister 4 inch	08/13/2020 @ 14:16	Bsmt=SE End	08/18/2020 @ 08:04	08/18/2020 @ 12:56
2856636	0.2 pCi/L	± 0.2 pCi/L	08/10/2020 @ 14:40	Charcoal Canister 4 inch	08/13/2020 @ 14:16	Bsmt=SE End BL	08/18/2020 @ 08:04	08/18/2020 @ 12:55
2856628	**11.0 pCi/L**	± 0.4 pCi/L	08/10/2020 @ 14:48	Charcoal Canister 4 inch	08/13/2020 @ 14:22	Crawl Space DP	08/18/2020 @ 08:04	08/18/2020 @ 12:48
2856652	**10.9 pCi/L**	± 0.5 pCi/L	08/10/2020 @ 14:48	Charcoal Canister 4 inch	08/13/2020 @ 14:22	Crawl Space DP	08/18/2020 @ 08:04	08/18/2020 @ 12:48
2856702	0.2 pCi/L	± 0.3 pCi/L	08/10/2020 @ 14:48	Charcoal Canister 4 inch	08/13/2020 @ 14:25	BLANK	08/18/2020 @ 08:04	08/18/2020 @ 12:48

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

For information on how to reduce radon levels in your home, please review the EPA booklet: Consumer's Guide to Radon Reduction (www.epa.gov/radon/pdfs/consguid.pdf) and contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

For New York clients: If the radon level of one or more testing devices is equal to or exceeds 20 pCi/L please contact the New York State Department of Health, Bureau of Environmental Radiation Protection, for technical advice and assistance at 518-402-7556 or toll free1-800-458-1158.

RTCA RADON TESTING CORPORATION OF AMERICA

PC2008180001

Site Radon Inspection Report

Date : 08/18/2020

Mr. Rick Pezzino
ACCU-VIEW PROPERTY INSP.
P.O. Box 641
East Amherst, NY 14051-

Client: Unknown
Test Location: 789 Upper Mountain Road
Lewiston, NY 14092-
Individual Canister Results

Canister ID# :	2856628	Test Start :	08/10/2020 @ 14:48
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:22
Location :	Crawl Space DP	Received:	08/18/2020 @ 08:04
Radon Level :	11.0 pCi/L	Analyzed:	08/18/2020 @ 12:48

Error for Measurement is: ± 0.4 pCi/L

Canister ID# :	2856636	Test Start :	08/10/2020 @ 14:40
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:16
Location :	Bsmt=SE End BL	Received:	08/18/2020 @ 08:04
Radon Level :	0.2 pCi/L	Analyzed:	08/18/2020 @ 12:55

CRM P-1510

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2856642	Test Start :	08/10/2020 @ 14:10
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:02
Location :	2nd FL=Office/Bed Rm	Received:	08/18/2020 @ 08:04
Radon Level :	1.6 pCi/L	Analyzed:	08/18/2020 @ 12:56

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2856647	Test Start :	08/10/2020 @ 14:12
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:03
Location :	2nd FL=Guest Rm	Received:	08/18/2020 @ 08:04
Radon Level :	2.1 pCi/L	Analyzed:	08/18/2020 @ 12:55

Error for Measurement is: ± 0.2 pCi/L

Canister ID# :	2856648	Test Start :	08/10/2020 @ 14:23
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:08
Location :	1st FL=LR SE	Received:	08/18/2020 @ 08:04
Radon Level :	2.2 pCi/L	Analyzed:	08/18/2020 @ 12:55

CRM P-2012

Error for Measurement is: ± 0.3 pCi/L

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
FL DOH RB1609
IL RNL2000201

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

PC2008180001

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/18/2020

Mr. Rick Pezzino
ACCU-VIEW PROPERTY INSP.
P.O. Box 641
East Amherst, NY 14051-

Client: Unknown
Test Location: 789 Upper Mountain Road
Lewiston, NY 14092-
Individual Canister Results

Canister ID# :	2856649	Test Start :	08/10/2020 @ 14:02
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 13:59
Location :	2nd FL=Mstr Bed Rm	Received:	08/18/2020 @ 08:04
Radon Level :	1.8 pCi/L	Analyzed:	08/18/2020 @ 12:55
Error for Measurement is: ±	0.2 pCi/L		

Canister ID# :	2856652	Test Start :	08/10/2020 @ 14:48
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:22
Location :	Crawl Space DP	Received:	08/18/2020 @ 08:04
Radon Level :	10.9 pCi/L	Analyzed:	08/18/2020 @ 12:48
Error for Measurement is: ±	0.5 pCi/L		

Canister ID# :	2856656	Test Start :	08/10/2020 @ 14:28
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:10
Location :	1st FL=Kitchen/Dining Area	Received:	08/18/2020 @ 08:04
Radon Level :	2.3 pCi/L	Analyzed:	08/18/2020 @ 12:48
Error for Measurement is: ±	0.3 pCi/L		

Canister ID# :	2856657	Test Start :	08/10/2020 @ 14:40
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:16
Location :	Bsmt=SE End	Received:	08/18/2020 @ 08:04
Radon Level :	7.0 pCi/L	Analyzed:	08/18/2020 @ 12:56
CRM P-1510			
Error for Measurement is: ±	0.4 pCi/L		

Canister ID# :	2856702	Test Start :	08/10/2020 @ 14:48
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 14:25
Location :	BLANK	Received:	08/18/2020 @ 08:04
Radon Level :	0.2 pCi/L	Analyzed:	08/18/2020 @ 12:48
Error for Measurement is: ±	0.3 pCi/L		

Canister ID# :	2856720	Test Start :	08/10/2020 @ 14:02
Canister Type :	Charcoal Canister 4 inch	Test Stop :	08/13/2020 @ 13:59
Location :	2nd FL=Mstr Bed Rm BL	Received:	08/18/2020 @ 08:04
Radon Level :	0.1 pCi/L	Analyzed:	08/18/2020 @ 12:56

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

NRSB ARL0001
NYS ELAP ID: 10806
PADEP ID: 0346
NJDEP ID: NY933
NJ MEB 90036
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IL RNL2000201

(914)345-3380
FAX (914)345-8546

2 Hayes Street, Elmsford, NY 10523
www.rtca.com

PC2008180001

RTCA RADON TESTING CORPORATION OF AMERICA

Site Radon Inspection Report

Date : 08/18/2020

Mr. Rick Pezzino
ACCU-VIEW PROPERTY INSP.
P.O. Box 641
East Amherst, NY 14051-

Client: Unknown
Test Location: 789 Upper Mountain Road
Lewiston, NY 14092-
Individual Canister Results
Error for Measurement is: ± 0.2 pCi/L

The results indicate that at least one testing device registered at or above the United States Environmental Protection Agency (EPA) action level of 4.0 picoCuries per liter of air (pCi/L). The EPA recommends mitigation if the average of two short-term tests taken in the lowest level of the building suitable for occupancy show radon levels that are equal to or greater than 4.0 pCi/L.

For information on how to reduce radon levels in your home, please review the EPA booklet: Consumer's Guide to Radon Reduction (www.epa.gov/radon/pdfs/consguid.pdf) and contact your state health department. The EPA maintains a radon information website, including copies of its publications, at www.epa.gov/iaq/radon.

For New Jersey clients: Please see the attached guidance document entitled Radon Testing and Mitigation: The Basics for further information.

For New York clients: If the radon level of one or more testing devices is equal to or exceeds 20 pCi/L please contact the New York State Department of Health, Bureau of Environmental Radiation Protection, for technical advice and assistance at 518-402-7556 or toll free1-800-458-1158.

PLEDGE OF ASSURED QUALITY

All procedures used for generating this report are in complete accordance with the current EPA protocols for the analysis of radon in air (EPA 402-R-92-004). The analytical results relate only to the samples tested, in the condition received by the lab, and that calculations were based upon the information supplied by client. RTCA and its personnel do not assume responsibility or liability, collectively and individually, for analysis results when detectors have been improperly handled or placed by the consumer, nor does RTCA and its personnel accept responsibility for any financial or health consequences of subsequent action or lack of action, taken by the customer or it's consultants based on RTCA-provided results.

National Radon Safety Board NRSB Certified Radon Professionals

Andreas C. George
Radon Measurement Specialist
NJ MES 11089

Dante Galan
Laboratory Director

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NYS ELAP ID: 10806
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2 Hayes Street, Elmsford, NY 10523
www.rtca.com

www.AccuviewInspections.com

Accu-View Property Inspections, Inc.
P.O. Box 641
Buffalo, New York 14051
(716)882-2200 - Phone
(425)962-1089 - E-Fax
e-mail: rick@AccuviewInspections.com

Inspector Name:

Richard F. Pezzino, CRI, RMS
NYS License #16000005200
American Society of Home Inspectors (ASHI)
ASHI Certified Inspector ID #250078
National Association of Home Inspectors (NAHI)
Certified Real Estate Inspector member #10-10248
New York State Department of Environmental Conservation
(Pest Inspector 7C License #T9847715)
National Radon Safety Board (NRSB)
Radon Measurement Specialist Certification #1SS0032.
American Association of Radon Scientists and Technologists - member #A6606

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Confidential Inspection Report

789 Upper Mountain Rd
Lewiston, NY 14092

August 10, 2020

Prepared for: Weston Solutions, Inc

This report is the exclusive property of the inspection company and the client whose name appears herewith and its use by any unauthorized persons is prohibited.

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GENERAL INFORMATION

Client & Site Information:

Inspection Date:

August 10, 2020.

Client:

Weston Solutions, Inc
1400 Weston Way
West Chester, PA 19380

Inspection Site:

789 Upper Mountain Rd
Lewiston, NY 14092

Property Occupied?

Yes.

People Present:

- Homeowner
- Peter Lisichenko, PG - EPA on-site coordinator.

Building Characteristics:

Estimated Age:

1957.

Building Style & Type:

1 family, Split Level.

Stories:

2

Space Below Grade:

Basement, Crawl space.

Climatic Conditions:

Weather:

Clear.

Soil Conditions:

Dry.

Outside Temperature (F):

89 F.

What is Radon?

Radon is a gas created in the soil from trace amounts of uranium and radium in the soil. These

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elements can be found everywhere in the world. Therefore, any building has the potential for elevated levels of radon. It is usually not a question of "Is there radon?" but rather, "How much radon is there?"

Radon comes from natural deposits of uranium and radium in the soil. Typically, it is not a result of manmade landfills or other suspicious sources.

Uranium breaks down to radium, which in turn decays into radon gas. Radon is an inert gas, which means that it does not react or combine with the elements in the ground. Because of this, radon gas can move up through the soil into the atmosphere, where it is easily diluted. However, when it enters a building constructed on top of this soil, it can build up and become a health concern.

People cannot see, taste or smell radon. There is no way that one can sense the presence of radon. Despite this, it can have a detrimental effect on people by increasing their likelihood of developing lung cancer.

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RADON SCREENING

Radon Screening

Testing Technician:

Richard F Pezzino, RMS
National Radon Safety Board
Radon Measurement Specialist Certification #1SS0032.

E.P.A. Certified Laboratory:

Canisters:

RTCA
Radon Testing Corp of America
2 Hayes Street
Elmsford, New York 10523
NYS ELAP #10806

NOTE:

Analysis method number used by the Laboratory
EPA-402-R-92-004, New York

SM20-22 7500 Rn (-06)

https://nepis.epa.gov/Exe/ZyNET.exe/94001H1B.txt?ZyActionD=ZyDocument&Client=EPA&Index=1991%20Thru%201994&Docs=&Query=&Time=&EndTime=&SearchMethod=1&TocRestrict=n&Toc=&TocEntry=&QField=&QFieldYear=&QFieldMonth=&QFieldDay=&UseQField=&IntQFieldOp=0&ExtQFieldOp=0&XmlQuery=&File=D%3A%5CZYFILES%5CINDEX%20DATA%5C91THRU94%5CTXT%5C00000034%5C94001H1B.txt&User=ANONYMOUS&Password=anonymous&SortMethod=h%7C-&MaximumDocuments=1&FuzzyDegree=0&ImageQuality=r75g8/r75g8/x150y150g16/i425&Display=hpfr&DefSeekPage=x&SearchBack=ZyActionL&Back=ZyActionS&BackDesc=Results%20page&MaximumPages=1&ZyEntry=4

Continuous Radon Monitor(CRM):

RADALINK, INC
5599 Peachtree Road
Atlanta, GA 30341
NYS Lab ID #11514

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Type of Screening Device Used:

Charcoal Canisters(AC)

Charcoal canisters are small flat containers filled with a measured amount of **activated charcoal**. The lid is usually perforated or screened to keep the charcoal from falling out. Once set , they are left unattended for at least 48 hours but not over 144 hours. The canister after the test period is then sealed and sent to an E.P.A. Listed Lab where the contents are analyzed. Analysis consists of counting the gamma radiation emission rate from the radon decay products resulting from the radon absorbed in the charcoal.

Continuous Radon Monitors

Continuous Radon Monitors use an electronic detector to accumulate and store information related to the periodic average concentration of radon gas or radon decay products. They are activated and left on site for a period of not less than 48 hours.

Number of Sampling Units Set:

4" Canisters: **11**

CRM'S: **2.**

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Duplicate or Sequential Sampling Taken:

- (1) - Duplicate - Test Canister # 9 & 10
- (1) - Field Blank - Test Canister # 11
- (1) - Office Blank - Test Canister #2.

Sampling Location:

- Crawlspace
- Basement
- 1st Floor
- 2nd Floor.

Lowest Living Level Type:

The lowest living level would be considered the Basement level. According to the E.P.A. Measurement Protocols, the lowest living level or levels suitable for occupancy shall have one primary measurement.

Testing Location:

Testing was performed al all levels of the home, including the crawlspace area.

Testing Location Minimum 20" Above Floor:

Yes.

Testing Location Minimum 12" From Exterior Door:

Yes.

Minimum of 4" Clearance Around Monitor:

Yes.

High Winds Noted During The Sampling Period:

No.

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Rain Noted During Screening Period:

None or minimal rain during the screening period.

Was the Exposure Time Over 48 Hours:

Yes.

Start Date:

08/10/2020.

Start Time:

SEE LAB REPORT FOR DETAILS OF EACH PLACEMENT TIME.

Stop Date:

08/13/2020.

Stop Time:

SEE LAB REPORT FOR DETAILS OF EACH PLACEMENT TIME.

Closed House Conditions:

Undetermined - Unable to determine if the home was closed prior to inspection time.

Non-Interference Agreement:

A written statement of non-interference request was left at the premises and e-mailed prior to set up.

Radon Test In Progress Sign Posted:

Yes, a radon test in progress sign was posted in a conspicuous area of the structure. This notice also contained a listing of the testing conditions.

Windows & Non-essential Doors Sealed:

The windows and doors were not sealed or tagged during the measurement period.

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Test Limitations:

There is uncertainty with any result due to statistical variations and other factors such as daily and seasonal variations in radon concentrations due to changes in the weather and operation of the dwelling as well as possible interference with the necessary test conditions that may or may not influence the test results..

Test Results:

At your request, radon testing was performed on the above referenced property.

At least one attached test results indicate a test result of **11.0** picocuries per liter of air in the house. This level is **ABOVE** the 4.0 pci/L action level set by the U.S. EPA.

EPA recommends that you take action to reduce your home's indoor radon levels if your radon test result is 4 pCi/L or higher. In most cases, systems with pipes and fans are used to reduce radon. Such systems are called "sub-slab depressurization," and do not require major changes to your home. These systems prevent radon gas from entering the home from below the concrete floor and the foundation. You should also test you home again after it is fixed to be sure that radon levels have been reduced.

A Certified Radon Mitigation Specialist should be consulted as to methods of reduction.

***RADON LEVELS CAN CHANGE, EPA RECOMMENDS RE-TESTING YOUR HOME EVERY 2 YEARS.

Dated: August 20, 2020

Certified Tester: _____
Richard F. Pezzino, RMS.

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Radon Testing Corp. of America
2 Hayes Street
Elmsford, NY 10523
Phone: (914) 345-3380

Radon Testing Summary Sheet

Please fill out all pertinent information legibly

Mailing Address:

Contact: Richard F. Pezzino, RMS

Company\Agency\Board of Ed: NRSB # 1SS0032

Address: Accu-View Property Inspections, Inc.
P.O. Box 641
Buffalo, NY 14051
716-882-2200
info@AccuviewInspections.com

City: _____ Zip: _____

Phone #: _____

Email: _____

Building/School Information:

School District: _____

School Code Number: _____

County: Niagara Municipality: _____

Building/School Name: _____

Test Location Street Address: 789 Upper Mountain Rd.
Lewiston, NY 14092

Start Date: 8-10-2020 Stop Date: 8/13/2020

Weather During Testing: Sunny/Hot

Total # detectors for this building: 11

NJ Testers Performing Tests in their state only:

NJDEP ID #: N/A

Building Type Code: Day Care Residential Non-residential School Public School Unknown

Structural Type of the Building: Basement Crawlspace Slab-on-grade Other Unknown

Purpose of Test: Standard Real Estate Duplicate Blank Post Mitigation

Test Conditions: Open House Closed House Rainy Windy Unknown

Instructions: Tear off center bar coded label from canister and affix to sheet in spaces provided. Please make sure top bar coded label is left on detector. Identify test location for each detector in space provided for that detector (room #, location in room, etc.) Use additional sheets as necessary. Please mark clearly if any detector is missing or damaged at retrieval.

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856649

Start Time: 2:02 PM Stop Time: 1:59 PM Duplicate? _____
Room # or other identifier: Master Bedroom
Blank? _____ Floor: 2

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856720

Start Time: 2:02 PM Stop Time: 1:59 PM Duplicate? _____
Room # or other identifier: Master Bedroom
Blank? Office Blank Floor: 2

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856642

Start Time: 2:10 PM Stop Time: 2:02 PM Duplicate? _____
Room # or other identifier: Office Bedroom
Blank? _____ Floor: 2

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856647

Start Time: 2:12 PM Stop Time: 2:03 PM Duplicate? _____
Room # or other identifier: Guest Bedroom
Blank? _____ Floor: 2

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856648

Start Time: 2:23 PM Stop Time: 2:08 PM Duplicate? _____
Room # or other identifier: Living Rm - SE = CRM# 2012
Blank? _____ Floor: 1

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856656

Start Time: 2:28 PM Stop Time: 2:10 PM Duplicate? _____
Room # or other identifier: Kitchen/Dining Area
Blank? _____ Floor: 1

Instructions: Tear off center bar coded label from canister and affix to sheet in spaces provided. Please make sure top bar coded label is left on detector. Identify test location for each detector in space provided for that detector (room #, location in room, etc.) Use additional sheets as necessary. Please mark clearly if any detector is missing or damaged at retrieval.

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856657

Start Time: 2:40 PM Stop Time: 2:16 PM Duplicate? _____

Room # or other identifier: SE end = CRm # 1510

Blank? _____ Floor: Basement

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856636

Start Time: 2:40 PM Stop Time: 2:16 PM Duplicate? _____

Room # or other identifier: SE end = CRM # 1510

Blank? Field Bl. Floor: Basement

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856652

Start Time: 2:48 PM Stop Time: 2:22 PM Duplicate? Yes

Room # or other identifier: _____

Blank? _____ Floor: Crawl space

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856628

Start Time: 2:48 PM Stop Time: 2:22 PM Duplicate? Yes

Room # or other identifier: _____

Blank? _____ Floor: Crawl Space

REMOVE THIS PORTION AND AFFIX TO TEST INFORMATION FORM
2856702

Start Time: 2:48 PM Stop Time: 2:25 PM Duplicate? _____

oom # or other identifier: Blank

lank? Yes Floor: _____

Start Time: _____ Stop Time: _____ Duplicate? _____

Room # or other identifier: _____

Blank? _____ Floor: _____

RADALINK
Radon TeleMonitor

Certificate of Calibration

Radalink Radon Monitor Serial Number: 1510 has been calibrated in accordance with Radalink, Inc. standard operating procedures for instrument calibration, on this date 03/19/2020.
date calibrated

This monitor will be out of calibration on this date 03/19/2021.
date expires

Radon chamber exposures were conducted between 03/13/2020 and 03/18/2020.
start of first run end of second run

Terry Howell, President

RADALINK
Radon TeleMonitor

Certificate of Calibration

Radalink Radon Monitor Serial Number: 2012 has been calibrated in accordance with Radalink, Inc. standard operating procedures for instrument calibration, on this date 01/30/2020.
date calibrated

This monitor will be out of calibration on this date 01/30/2021.
date expires

Radon chamber exposures were conducted between 01/24/2020 and 01/30/2020.
start of first run end of second run

Terry Howell, President

CERTIFIED RADON REPORT

August 13, 2020 Test Number: 2012-290

Property Inspected: **789 Upper Mountain Road, Lewiston, NY 14092**

Licensed Radalink Radon Inspector:
Accu-View Property Inspections, Inc.
Richard Pezzino
PO Box 641
Buffalo, NY 14051
Phone: 716-882-2200
Fax: 452-962-1089

Test performed for:
Weston Solutions, Inc.

			Placed By:	Richard Pezzino (1SS0032)		Temp.	Pressure	R.H.
Calibrated:	01/30/2020 - 01/29/2021		Retrieved By:	Richard Pezzino (1SS0032)	Min:	78.0	30.2	49
Test Started:	08/10/2020	2:19 PM	Test Site:	Living Room	Avg:	81.9	30.4	57
Test Ended:	08/13/2020	2:04 PM	Test Duration:	71 hours	Max:	87.0	30.5	62

AVERAGE RADON CONCENTRATION: 1.9 pCi/l

Test has met minimum EPA sampling duration. Uncertainty: ± 1.53%

	08/10/2020		08/11/2020		08/12/2020		08/13/2020	
Time	pCi/l	Flags	pCi/l	Flags	pCi/l	Flags	pCi/l	Flags
00:19 am			2.0		0.5		0.2	
01:19			2.5		0.9		0.9	
02:19			2.5		1.1		1.0	
03:19			2.7		1.5		1.7	
04:19			2.8		2.2		2.4	
05:19			2.4		2.3		1.9	
06:19			3.1		4.0		2.6	
07:19			2.3		3.9		2.8	
08:19			2.6		3.3		3.4	
09:19			2.8		2.8		3.4	
10:19			2.4		4.1		3.1	
11:19			3.4		3.4		3.5	
12:19 pm			2.0		3.0	P	1.4	
01:19			2.3		2.8		2.1	
02:19			1.9		2.9			
03:19	0.4		2.1		2.3			
04:19	0.5		2.2		2.9			
05:19	0.5		1.3		2.7			
06:19	0.5		1.9		1.7			
07:19	0.8		0.7		2.7			
08:19	0.7		0.0		1.8			
09:19	0.7		0.5		1.0			
10:19	0.7		0.2		0.6			
11:19	1.5		0.3		0.1			

Flags: P= AC Power Disruption; T=Tilt
Eq. = Equilization Period

While every effort was made to maintain optimum quality control and EPA Protocol during the testing period, neither Radalink, Inc. or its licensed agents provide any warranty, expressed or implied, for the consequences of erroneous test results. There can be some uncertainty with any measurement due to statistical variations, extreme weather changes, operation of the building, and other factors, Radalink, Inc. and its licensed operators shall not be liable under any charge or claim for losses, claims, charges, fees, demands, expenses, or damages resulting from a radon test. This report is subject to the terms on the last page of the document.

Radalink, Inc. NY Cert. No.: ELAP ID 11514; NRPP Cert.: 101381AL1

RADALINK™ RADON MONITORS

ENVIRONMENTAL DATA

MONITOR-TEST NUMBER: 2012-290

Property Inspected: **789 Upper Mountain Road**
Lewiston, NY 14092

	08/10/2020			08/11/2020			08/12/2020			08/13/2020		
Time	Temp	InHg	RH	Temp	InHg	RH	Temp	InHg	RH	Temp	InHg	RH
00:19 am				86.0	30.3	56	80.0	30.3	53	80.0	30.4	53
01:19				84.0	30.3	56	80.0	30.4	56	80.0	30.5	53
02:19				84.0	30.3	56	80.0	30.4	56	80.0	30.5	53
03:19				84.0	30.3	56	80.0	30.4	56	80.0	30.5	53
04:19				84.0	30.2	59	80.0	30.4	56	80.0	30.5	53
05:19				84.0	30.2	59	80.0	30.4	56	78.0	30.5	53
06:19				84.0	30.2	59	80.0	30.4	56	78.0	30.5	56
07:19				82.0	30.2	59	78.0	30.4	59	78.0	30.5	56
08:19				82.0	30.2	59	78.0	30.4	59	78.0	30.5	56
09:19				82.0	30.2	59	78.0	30.4	59	78.0	30.5	59
10:19				82.0	30.2	59	78.0	30.5	59	78.0	30.5	59
11:19				82.0	30.3	59	78.0	30.4	59	78.0	30.5	59
12:19 pm				84.0	30.2	59	78.0	30.4	62	80.0	30.5	59
01:19				84.0	30.3	59	84.0	30.5	56	80.0	30.5	59
02:19				84.0	30.3	59	82.0	30.5	56			
03:19	87.0	30.4	50	84.0	30.3	59	82.0	30.4	59			
04:19	87.0	30.4	49	86.0	30.3	62	82.0	30.4	59			
05:19	87.0	30.3	53	86.0	30.3	62	82.0	30.4	59			
06:19	86.0	30.3	56	86.0	30.3	62	82.0	30.4	59			
07:19	86.0	30.3	56	84.0	30.3	62	82.0	30.4	56			
08:19	86.0	30.3	56	84.0	30.3	59	82.0	30.4	50			
09:19	86.0	30.3	56	84.0	30.3	59	80.0	30.5	50			
10:19	86.0	30.3	56	82.0	30.3	56	80.0	30.4	53			
11:19	86.0	30.3	56	82.0	30.3	56	80.0	30.4	53			

AVERAGE RADON CONCENTRATION: 1.9 pCi/l

RADALINK™ RADON MONITORS

Reviewed and certified by

Terry Howell, Quality Assurance Mgr.
Radalink, Inc. NRPP 135791T

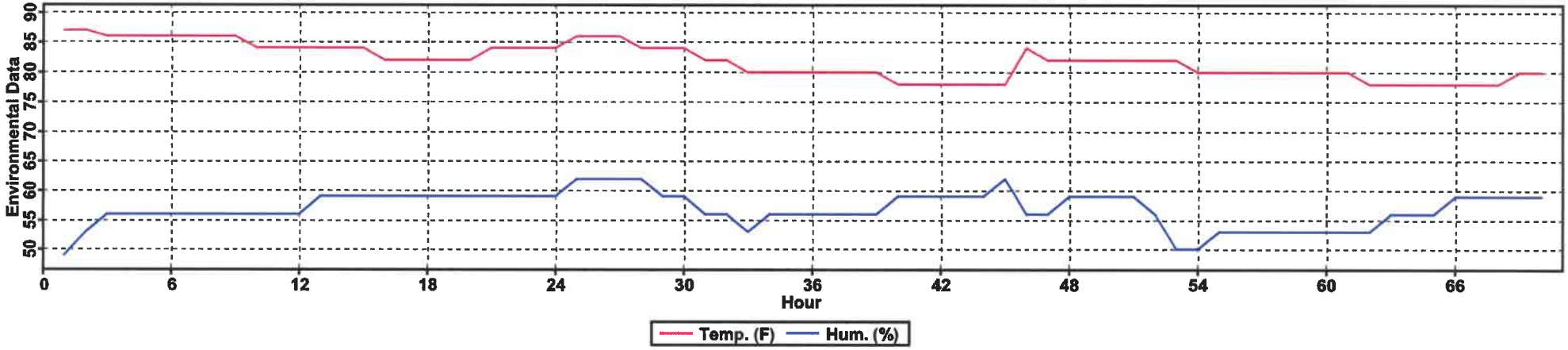
	Minimum	Average	Maximum	Variance
Temperature:	78.0	81.9	87.0	7.73
Barometric Pressure:	30.2	30.4	30.5	0.01
Relative Humidity:	49	57	62	8.32

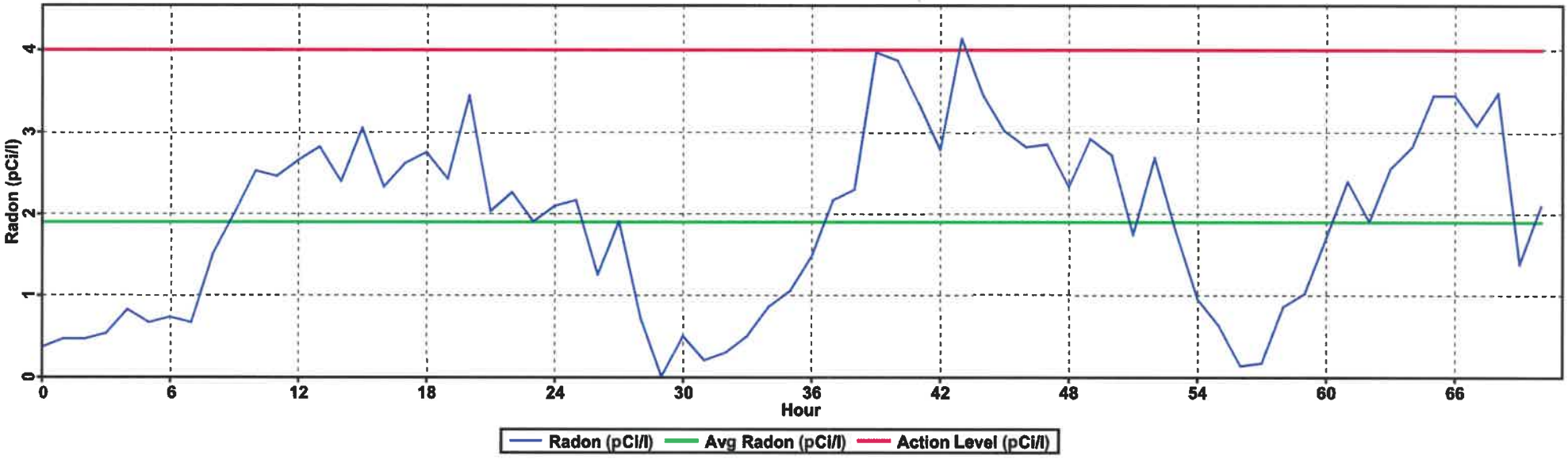
NOTE: The first hour's environmental data is excluded from the table above.

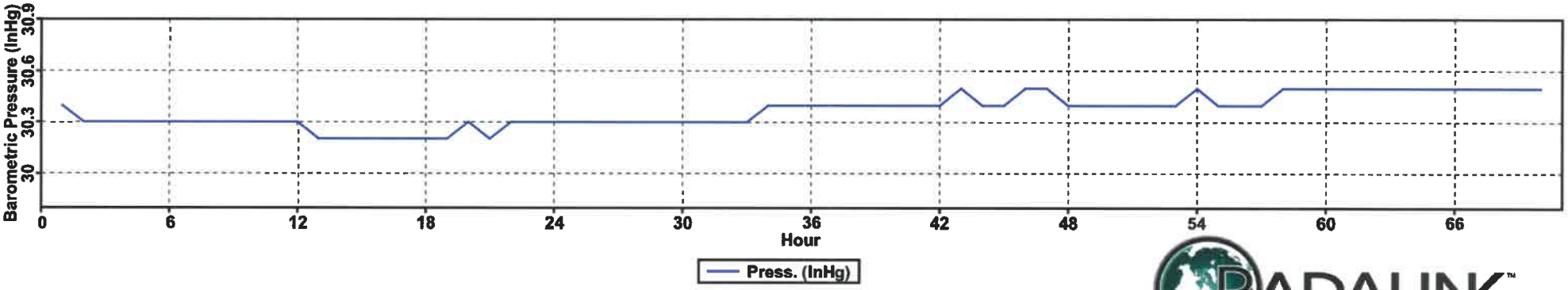
Radalink, Inc. 5599 Peachtree Road Atlanta, GA 30341 Phone: (800)295-4655

GRAPHICAL DATA VIEW

MONITOR-TEST NUMBER: 2012-290







Property Inspected: 789 Upper Mountain Road, Lewiston, NY 14092

AVERAGE RADON CONCENTRATION: 1.9 pCi/l

RADALINK™ RADON MONITORS

Date: 2020-08-13

Test Proviso

Re: Certified Radon Report #: 2012-290 Dated: 2020-08-13

Performed At: 789 Upper Mountain Road, Lewiston, NY 14092

This report does not contain results for every measurement performed at this address. Other locations within the dwelling were tested. In accordance with Illinois regulation, do not conclude mitigation is unnecessary until results of all measurements have been received and are below the 4 pCi/l Action Level. The state if Illinois recommends that a radon control system not be installed until all measurements have been received.

ACCU-VIEW
PROPERTY INSPECTIONS

716-882-2200

www.AccuviewInspections.com

Authorization Agreement

The Radon Monitor being used to perform the radon survey of the dwelling referenced below has been approved by the U.S. Environmental Protection Agency for conducting radon measurements. The operator will conduct a radon survey for a **minimum** of 48 hours according to protocols designed for use in residences, as described in the EPA document, **"Home Buyer's and Seller's Guide to Radon"** (EPA 402-K-00-008). These guidelines were developed specifically to deal with the time-sensitive nature of home purchases and sales.

The following conditions must be maintained in order to achieve a valid test:

1. **All exterior windows must be kept closed. Exterior doors must be kept closed except for momentary** entry and exit.
2. The "closed house conditions" described above must have been maintained for 12 hours prior to the beginning of the test and sustained all during the test.
3. The radon monitor cannot be moved, covered, or tampered with in any way.
4. High volume, whole-house, and window fans shall not be operated. Fireplaces or wood stoves shall not be operated unless they are a primary heat source.
5. Heating and air conditioning (including permanently installed heat recovery ventilators) should operate normally. Window unit air conditioners shall operate only in the re-circulation mode.

EPA recommends that radon measurements conducted for real estate transactions be performed using tamper-detection techniques. **Be alerted that the Radon Monitor is equipped with the ability to detect and record when the monitor is moved and anytime the power source is changed. Hourly readings will record any unusual swings in the radon concentration, temperature, relative humidity and barometric pressure.** At his discretion, the tester may nullify the test result if it appears that, in his professional judgment, the results are unreliable due to the suspicion of tampering. **In that event, the seller may incur the cost of a retest in the amount of $200.00**

Authorization Signatures

I, as the undersigned responsible individual, understand all the above conditions and restrictions, and agree to inform all the occupants of this dwelling of the conditions above, and agree to maintain these conditions during the radon test period.

* E-mailed to Weston Solutions 7/31/2020

Responsible Individual Signature — *Title (owner, real estate agent, other)* — *Date*

789 Upper Mountain Rd
Lewiston NY 14092

Address of Property Being Tested under this Authorization Agreement

Radon Measurement Technician Signature

PLEASE CALL/TEXT 716-882-2200 TO SET UP PICK-UP TIME

#5 - 1st Floor Living Rm(SE) & CRM #2012

HOW TO INTERPRET YOUR TEST RESULTS

THIS REPORT RELATES ONLY TO THE LOCATION(S) TESTED DURING THE MEASURMENT PERIOD

These results should be interpreted in accordance with the EPA's guidance as published in EPA Publication No. 402-K-008 *"Home Buyer's and Seller's Guide to Radon"* and EPA Publication No. 402-K92-001, *"Citizen's Guide to Radon"*.

Because radon is the second leading cause of lung cancer, the World Health Organization (WHO) and the U.S. Surgeon General recommend testing all homes for radon and mitigating those with an average concentration above the U.S. EPA action level of 4 picocuries per Liter (4 pCi/IL) or higher. Even if your test result is below 4 pCi/L, mitigation may provide additional reduction of the risk of lung cancer. Find more information at Radalink.com/results.

The Radalink Radon TeleMonitor (NRPP Device # 00472, NRSB Device # 31814) or **The Radalink AirCat® Monitor** (NRPP Device # 00477, NRSB Device # 31815) used to perform this test is EPA, NRSB and/or NRPP approved and meets the Single Test Option requirements (EPA 402-R-93-003, Section 3.2.3) for conducting radon measurements in the context of a real estate transaction and may be used for determining the necessity for radon mitigation.

Radon reduction systems work! Professionally installed radon mitigation systems can reduce the radon levels in your home by up to 99%. Thousands of people have reduced radon levels in their homes. Maintaining a radon reduction system takes little effort to keep the system working properly and the radon levels low. EPA recommends that you have a qualified contractor (NRPP certified or state licensed) fix your home if radon levels are confirmed to be 4 pCi/L or higher. Find a licensed mitigator at Radalink.com/mitigators. For more information on how to reduce your radon health risk, contact your state radon office:

Alabama	800-582-1866	Illinois	217-782-1325	Montana	800-546-0483	Rhode Island	401-222-7796
Alaska	907-269-8000	Indiana	800-272-9723	Nebraska	402-471-1005	South Carolina	800-768-0362
Arizona	602-255-4845	Iowa	800-383-5992	Nevada	888-723-6610	South Dakota	800-438-3367
Arkansas	501-661-2301	Kansas	800-693-5343	New Hampshire	603-271-4052	Tennessee	800-232-1139
California	800-745-7236	Kentucky	502-564-4856	New Jersey	800-648-0394	Texas	800-293-0753
Colorado	800-846-3986	Louisiana	225-765-0160	New Mexico	505-476-8608	Utah	800-458-0145
Connecticut	860-509-7367	Maine	207-287-5743	New York	800-458-1158	Vermont	800-439-8550
Delaware	302-744-4546	Maryland	866-703-3266	North Carolina	828-712-0972	Virginia	804-864-8150
Washington DC	202-535-2999	Massachusetts	800-723-6695	North Dakota	701-328-5188	Washington	360-236-3253
Florida	800-543-8279	Michigan	517-284-1837	Ohio	800-523-4439	West Virginia	800-922-1255
Georgia	706-542-9165	Minnesota	800-798-9050	Oklahoma	405-702-5162	Wisconsin	888-569-7236
Hawaii	808-586-4700	Mississippi	800-626-7739	Oregon	971-673-0490	Wyoming	307-777-6015
Idaho	800-445-8647	Missouri	573-751-6160	Pennsylvania	800-237-2366		

USEPA Radon Program website: www.epa.gov/radon and radon hotline 800-767-7236

SURGEON GENERAL HEALTH ADVISORY: "Indoor radon is the second-leading cause of lung cancer in the U.S. and breathing it over prolonged periods can present a significant health risk to families all over the country. More than 20,000 Americans die of radon-related lung cancer every year. It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."

CONSUMER FEDERATION OF AMERICA: "Consumers need to know about the health of a house they are considering purchasing, including whether there is a radon problem, and if so, how to fix it." *The EPA Home Buyer's and Sellers Guide to Radon* provides practical consumer information that every homebuyer needs to know.

FLORIDA NOTICE TO CLIENTS: An organization or individual certified by the Florida Dept. of Health to perform radon or radon progeny measurements or radon mitigation services provides this Notice to you. Any questions, comments, or complaints regarding the persons performing these measurement or mitigation services may be directed to the Florida Dept. of Health, Bureau of Facility Programs, Radon Indoor Air Quality, 4052 Bald Cypress Way, Bin #A08, Tallahassee, Florida 32399-1710.

***Florida Dept. of Health contact:* 800-543-8279**

MAINE NOTICE TO CLIENTS: As per 22 MRSA, Sec. 771, results of this test will be reported to the Maine Dept. of Health and Human Services. Any questions, comments, or complaints concerning individuals or firms providing radon related services in Maine should be directed to: Radiation Control Program 11 State House Station Augusta, ME 04333-0010

***Maine Dept. of Health contact:* 207-287-5743**

PENNSYLVANIA NOTICE TO CLIENTS: The Radon Certification Act requires that anyone who provides radon-related service or product to the general public must be certified by the Pennsylvania Department of Environmental Protection. You are entitled to evidence of certification from any person who provides such services or products. You are also entitled to a price list for services or products offered. All radon measurement data will be sent to the Department as required in the Act and will be kept confidential. If you have any questions, comments or complaints concerning persons who provide radon-related services, please contact the Department at the Bureau of Radiation Protection, Dept. Of Environmental Protection, P.O. Box 8469, Harrisburg, PA 17105-8469.

***Department at the Bureau of Radiation Protection:* 717-783-3594**

RHODE ISLAND NOTICE TO CLIENTS: This notice is provided to you by an organization or individual licenses and/or certified by the Rhode Island Dept. of Health to perform radon measurements. Any questions, comments, or complaints regarding the person performing these measurements may be directed to the RI Dept. of Health, Radon Control Program, 3 Capitol Hill Room 206, Providence RI 02908-5097

***Rhode Island Dept. of Health contact:* 401-222-7796**

Revision: December 2019

CERTIFIED RADON REPORT

August 13, 2020

Test Number: 1510-163

Property Inspected: **789 Upper Mountain Road, Lewiston, NY 14092**

Licensed Radalink Radon Inspector:
Accu-View Property Inspections, Inc.
Richard Pezzino
PO Box 641
Buffalo, NY 14051
Phone: 716-882-2200
Fax: 452-962-1089

Test performed for:
Weston Solutions, Inc.

						Temp.	Pressure	R.H.
			Placed By:	Richard Pezzino (1SS0032)				
Calibrated:	03/19/2020 - 03/19/2021		Retrieved By:	Richard Pezzino (1SS0032)	Min:	75.0	30.2	56
Test Started:	08/10/2020	2:34 PM	Test Site:	Finished Basement	Avg:	77.2	30.3	64
Test Ended:	08/13/2020	2:12 PM	Test Duration:	71 hours	Max:	80.0	30.5	69

AVERAGE RADON CONCENTRATION: 6.7 pCi/l

Test has met minimum EPA sampling duration. Uncertainty: ± 0.92%

	08/10/2020		08/11/2020		08/12/2020		08/13/2020	
Time	pCi/l	Flags	pCi/l	Flags	pCi/l	Flags	pCi/l	Flags
00:34 am			8.1		5.0		7.8	
01:34			7.5		6.3		6.6	
02:34			8.6		7.3		8.9	
03:34			8.6		7.4		9.6	
04:34			6.9		11.0		8.1	
05:34			7.1		8.1		10.5	
06:34			7.4		11.7		11.2	
07:34			10.6		11.1		10.2	
08:34			8.1		7.6		9.0	
09:34			9.1		13.6		10.9	
10:34			6.7		10.2		9.8	
11:34			5.6		10.6	P	8.5	
12:34 pm			5.1		8.2	P	5.5	
01:34			3.5		5.4		4.4	
02:34			4.7		4.8			
03:34	2.1		3.9		4.8			
04:34	4.4		5.0		6.3			
05:34	4.0		3.3		7.0			
06:34	2.6		5.4		4.2			
07:34	4.6		4.2		3.9			
08:34	3.2		5.4		3.7			
09:34	3.9		3.1		5.1			
10:34	4.5		3.4		5.3			
11:34	6.4		6.0		5.0			

Flags: P= AC Power Disruption; T=Tilt
Eq. = Equilization Period

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Radalink, Inc. NY Cert. No.: ELAP ID 11514; NRPP Cert.: 101381AL1

ENVIRONMENTAL DATA

MONITOR-TEST NUMBER: 1510-163

Property Inspected: **789 Upper Mountain Road**
Lewiston, NY 14092

	08/10/2020			08/11/2020			08/12/2020			08/13/2020		
Time	Temp	InHg	RH	Temp	InHg	RH	Temp	InHg	RH	Temp	InHg	RH
00:34 am				78.0	30.2	66	78.0	30.3	66	77.0	30.4	62
01:34				78.0	30.2	66	78.0	30.3	66	77.0	30.4	62
02:34				78.0	30.2	66	78.0	30.3	66	77.0	30.4	62
03:34				78.0	30.2	66	77.0	30.4	66	77.0	30.4	62
04:34				78.0	30.2	66	77.0	30.4	61	77.0	30.4	62
05:34				78.0	30.2	66	77.0	30.4	62	75.0	30.4	62
06:34				77.0	30.2	66	77.0	30.4	62	75.0	30.5	62
07:34				77.0	30.2	66	77.0	30.4	62	75.0	30.5	62
08:34				77.0	30.2	66	77.0	30.4	62	75.0	30.5	62
09:34				77.0	30.2	66	77.0	30.4	66	75.0	30.5	66
10:34				77.0	30.2	66	77.0	30.4	66	75.0	30.5	61
11:34				77.0	30.2	66	77.0	30.4	61	77.0	30.5	61
12:34 pm				77.0	30.2	66	77.0	30.4	66	77.0	30.4	62
01:34				77.0	30.2	66	78.0	30.4	59	77.0	30.4	62
02:34				77.0	30.2	66	78.0	30.4	59			
03:34	82.0	30.3	53	77.0	30.2	66	77.0	30.4	62			
04:34	80.0	30.3	56	77.0	30.2	66	77.0	30.4	62			
05:34	78.0	30.3	59	78.0	30.3	65	77.0	30.4	61			
06:34	78.0	30.3	62	78.0	30.3	65	77.0	30.4	66			
07:34	78.0	30.3	66	78.0	30.3	69	77.0	30.4	61			
08:34	78.0	30.3	66	78.0	30.3	69	77.0	30.4	61			
09:34	78.0	30.3	66	78.0	30.3	69	77.0	30.4	62			
10:34	78.0	30.3	66	78.0	30.3	65	77.0	30.4	62			
11:34	78.0	30.3	66	78.0	30.3	66	77.0	30.4	62			

AVERAGE RADON CONCENTRATION: 6.7 pCi/l

RADALINK™
RADON MONITORS

Reviewed and certified by

Terry Howell, Quality Assurance Mgr.
Radalink, Inc. NRPP 135791T

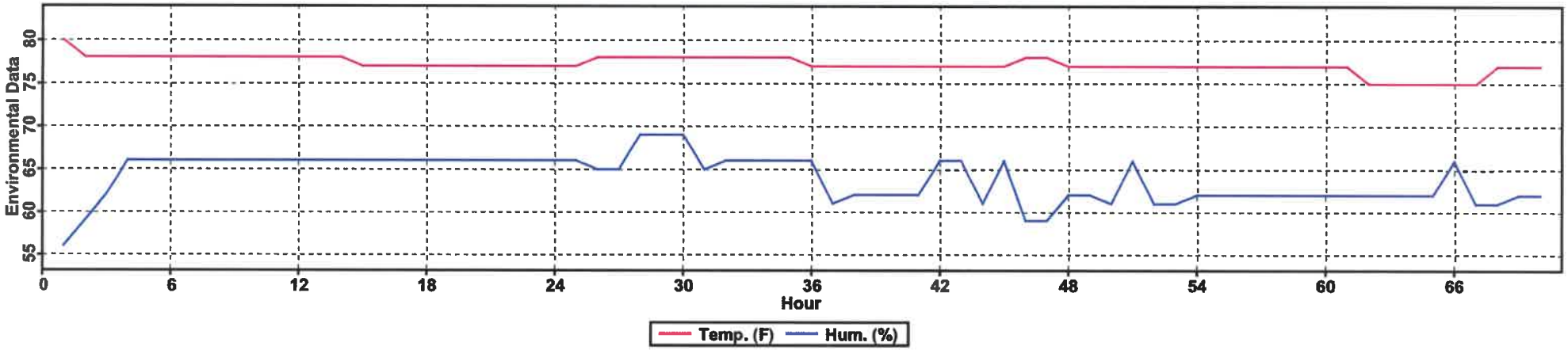
	Minimum	Average	Maximum	Variance
Temperature:	75.0	77.2	80.0	0.78
Barometric Pressure:	30.2	30.3	30.5	0.01
Relative Humidity:	56	64	69	7.03

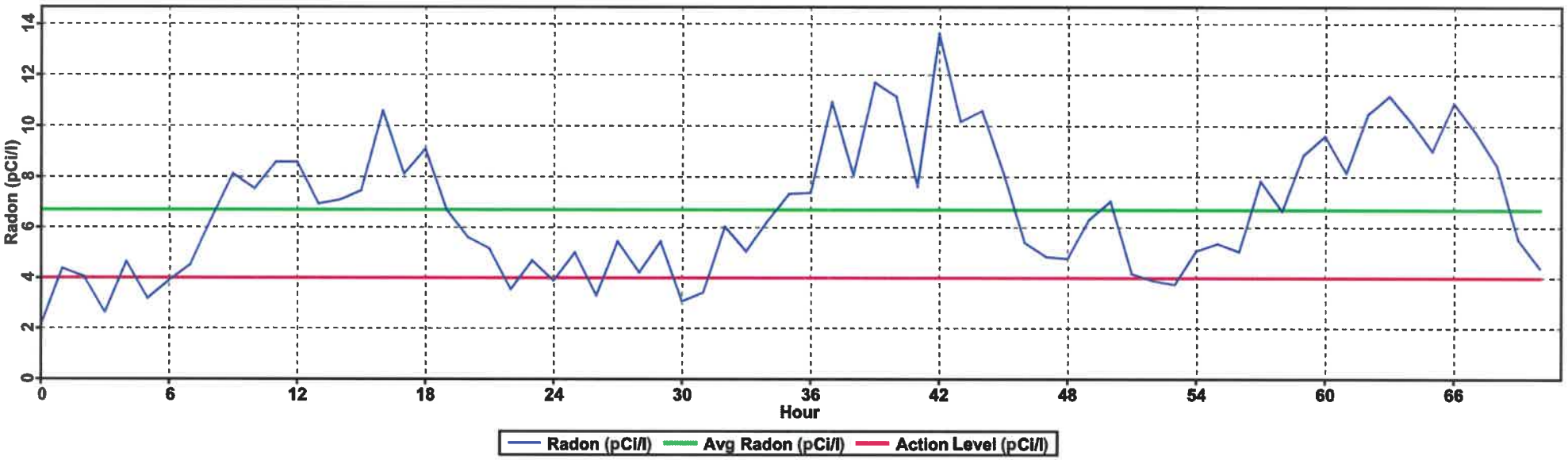
NOTE: The first hour's environmental data is excluded from the table above.

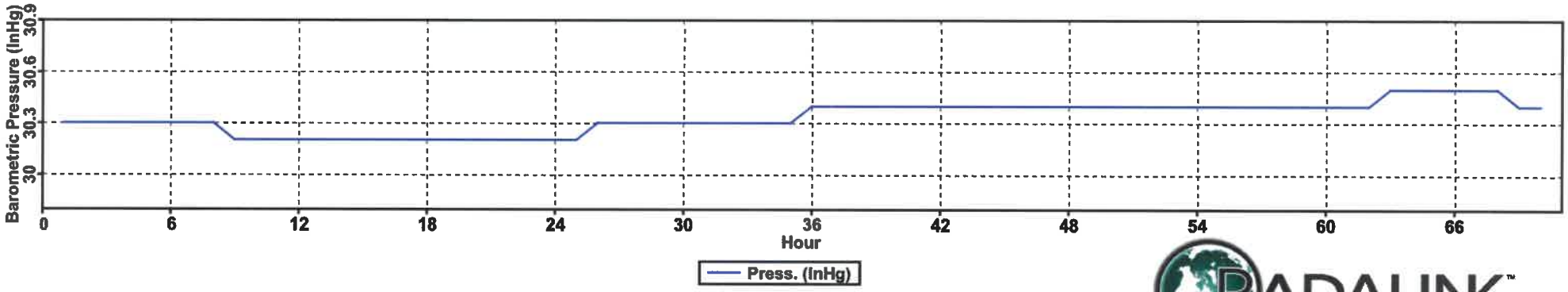
Radalink, Inc. 5599 Peachtree Road Atlanta, GA 30341 Phone: (800)295-4655

GRAPHICAL DATA VIEW

MONITOR-TEST NUMBER: 1510-163







Property Inspected: 789 Upper Mountain Road, Lewiston, NY 14092

AVERAGE RADON CONCENTRATION: 6.7 pCi/l

RADALINK™ RADON MONITORS

IMPORTANT NOTICE

IF YOUR RADON TEST RESULT IS AT OR ABOVE EPA's 4.0 pCi/L ACTION LEVEL

THE EPA AND YOUR STATE RADON PROGRAM RECOMMEND THIS HOME BE MITIGATED

If the average radon concentration in the home tested is at or above EPA's 4.0 pCi/L Action Level, mitigation is recommended. EPA and Radalink recommend either a state licensed (where applicable) or a NRPP or NRSB Certified radon mitigator to perform the system installation.

An Independent Post Mitigation Clearance Test

Upon completion of the work, the EPA recommends that you have an **independent** post-mitigation test performed. If the current owners are hiring the mitigation contractor, notify them prior to the installation that you intend to have your Radalink affiliated radon professional perform the post mitigation test. (Call your Radalink affiliate for service prices and details.) According to EPA and state protocol, the test can be conducted after the remediation system has been running continuously for 24 hours. Find out when the work will be completed and inform your Radalink affiliate so the test can be scheduled as soon as possible.

Make Sure the Installation Meets EPA Mitigation Standards

For your added protection, many Radalink affiliates inspect the mitigation systems to ensure they meet the EPA Mitigation Standards or state requirements and provide you with a completed Checklist Inspection Report.

Call Your Radalink Affiliate for Service Prices and Details.

RADALINK™
RADON MONITORING SYSTEMS

www.radalink.com

Date: 2020-08-13

Test Proviso

Re: Certified Radon Report #: 1510-163 Dated: 2020-08-13

Performed At: 789 Upper Mountain Road, Lewiston, NY 14092

This report does not contain results for every measurement performed at this address. Other locations within the dwelling were tested. In accordance with Illinois regulation, do not conclude mitigation is unnecessary until results of all measurements have been received and are below the 4 pCi/l Action Level. The state if Illinois recommends that a radon control system not be installed until all measurements have been received.

ACCU-VIEW
PROPERTY INSPECTIONS

716-882-2200

www.AccuviewInspections.com

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Authorization Signatures

I, as the undersigned responsible individual, understand all the above conditions and restrictions, and agree to inform all the occupants of this dwelling of the conditions above, and agree to maintain these conditions during the radon test period.

* E-mailed to Weston Solutions 7/31/2020

Responsible Individual Signature — *Date (lender, real estate agent, other)* — *Date*

789 Upper Mountain Rd
Lewiston NY 14092

Address of Property being Tested under this Authorization Agreement

Radon Measurement Technician Signature (Witness)

PLEASE CALL/TEXT 716-882-2200 TO SET UP PICK-UP TIME

CORAZÓN
Basement: #7&8
CRM #1510

HOW TO INTERPRET YOUR TEST RESULTS

THIS REPORT RELATES ONLY TO THE LOCATION(S) TESTED DURING THE MEASURMENT PERIOD

These results should be interpreted in accordance with the EPA's guidance as published in EPA Publication No. 402-K-008 *"Home Buyer's and Seller's Guide to Radon"* and EPA Publication No. 402-K92-001, *"Citizen's Guide to Radon"*.

Because radon is the second leading cause of lung cancer, the World Health Organization (WHO) and the U.S. Surgeon General recommend testing all homes for radon and mitigating those with an average concentration above the U.S. EPA action level of 4 picocuries per Liter (4 pCi/lL) or higher. Even if your test result is below 4 pCi/L, mitigation may provide additional reduction of the risk of lung cancer. Find more information at Radalink.com/results.

The Radalink Radon TeleMonitor (NRPP Device # 00472, NRSB Device # 31814) or **The Radalink AirCat® Monitor** (NRPP Device # 00477, NRSB Device # 31815) used to perform this test is EPA, NRSB and/or NRPP approved and meets the Single Test Option requirements (EPA 402-R-93-003, Section 3.2.3) for conducting radon measurements in the context of a real estate transaction and may be used for determining the necessity for radon mitigation.

Radon reduction systems work! Professionally installed radon mitigation systems can reduce the radon levels in your home by up to 99%. Thousands of people have reduced radon levels in their homes. Maintaining a radon reduction system takes little effort to keep the system working properly and the radon levels low. EPA recommends that you have a qualified contractor (NRPP certified or state licensed) fix your home if radon levels are confirmed to be 4 pCi/L or higher. Find a licensed mitigator at Radalink.com/mitigators. For more information on how to reduce your radon health risk, contact your state radon office:

Alabama	800-582-1866	Illinois	217-782-1325	Montana	800-546-0483	Rhode Island	401-222-7796
Alaska	907-269-8000	Indiana	800-272-9723	Nebraska	402-471-1005	South Carolina	800-768-0362
Arizona	602-255-4845	Iowa	800-383-5992	Nevada	888-723-6610	South Dakota	800-438-3367
Arkansas	501-661-2301	Kansas	800-693-5343	New Hampshire	603-271-4052	Tennessee	800-232-1139
California	800-745-7236	Kentucky	502-564-4856	New Jersey	800-648-0394	Texas	800-293-0753
Colorado	800-846-3986	Louisiana	225-765-0160	New Mexico	505-476-8608	Utah	800-458-0145
Connecticut	860-509-7367	Maine	207-287-5743	New York	800-458-1158	Vermont	800-439-8550
Delaware	302-744-4546	Maryland	866-703-3266	North Carolina	828-712-0972	Virginia	804-864-8150
Washington DC	202-535-2999	Massachusetts	800-723-6695	North Dakota	701-328-5188	Washington	360-236-3253
Florida	800-543-8279	Michigan	517-284-1837	Ohio	800-523-4439	West Virginia	800-922-1255
Georgia	706-542-9165	Minnesota	800-798-9050	Oklahoma	405-702-5162	Wisconsin	888-569-7236
Hawaii	808-586-4700	Mississippi	800-626-7739	Oregon	971-673-0490	Wyoming	307-777-6015
Idaho	800-445-8647	Missouri	573-751-6160	Pennsylvania	800-237-2366		

USEPA Radon Program website: www.epa.gov/radon and radon hotline 800-767-7236

SURGEON GENERAL HEALTH ADVISORY: "Indoor radon is the second-leading cause of lung cancer in the U.S. and breathing it over prolonged periods can present a significant health risk to families all over the country. More than 20,000 Americans die of radon-related lung cancer every year. It's important to know that this threat is completely preventable. Radon can be detected with a simple test and fixed through well-established venting techniques."

CONSUMER FEDERATION OF AMERICA: "Consumers need to know about the health of a house they are considering purchasing, including whether there is a radon problem, and if so, how to fix it." *The EPA Home Buyer's and Sellers Guide to Radon* provides practical consumer information that every homebuyer needs to know.

FLORIDA NOTICE TO CLIENTS: An organization or individual certified by the Florida Dept. of Health to perform radon or radon progeny measurements or radon mitigation services provides this Notice to you. Any questions, comments, or complaints regarding the persons performing these measurement or mitigation services may be directed to the Florida Dept. of Health, Bureau of Facility Programs, Radon Indoor Air Quality, 4052 Bald Cypress Way, Bin #A08, Tallahassee, Florida 32399-1710.

***Florida Dept. of Health contact:* 800-543-8279**

MAINE NOTICE TO CLIENTS: As per 22 MRSA, Sec. 771, results of this test will be reported to the Maine Dept. of Health and Human Services. Any questions, comments, or complaints concerning individuals or firms providing radon related services in Maine should be directed to: Radiation Control Program 11 State House Station Augusta, ME 04333-0010

***Maine Dept. of Health contact:* 207-287-5743**

PENNSYLVANIA NOTICE TO CLIENTS: The Radon Certification Act requires that anyone who provides radon-related service or product to the general public must be certified by the Pennsylvania Department of Environmental Protection. You are entitled to evidence of certification from any person who provides such services or products. You are also entitled to a price list for services or products offered. All radon measurement data will be sent to the Department as required in the Act and will be kept confidential. If you have any questions, comments or complaints concerning persons who provide radon-related services, please contact the Department at the Bureau of Radiation Protection, Dept. Of Environmental Protection, P.O. Box 8469, Harrisburg, PA 17105-8469.

***Department at the Bureau of Radiation Protection:* 717-783-3594**

RHODE ISLAND NOTICE TO CLIENTS: This notice is provided to you by an organization or individual licenses and/or certified by the Rhode Island Dept. of Health to perform radon measurements. Any questions, comments, or complaints regarding the person performing these measurements may be directed to the RI Dept. of Health, Radon Control Program, 3 Capitol Hill Room 206, Providence RI 02908-5097

***Rhode Island Dept. of Health contact:* 401-222-7796**

Revision: December 2019

THE NATIONAL RADON SAFETY BOARD

Certified Radon Professionals

Certifies that

Richard F. Pezzino

Has Successfully Met The Established & Published Requirements for Certification
by The National Radon Safety Board as a

Radon Measurement Specialist

1SS0032

Certification Number

7/30/2021

Expiration Date

National Radon Safety Board

Kehaulani Kekoa

Certification Coordinator

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This certificate is the property of The National Radon Safety Board and is not official without the raised seal.

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, New Jersey 08837-3703
Phone: 732-585-4400
www.westonsolutions.com

SUPERFUND TECHNICAL ASSESSMENT & RESPONSE TEAM V
EPA CONTRACT NO.: 68HE0319D0004

START V-02-F-0021

TRANSMITTAL MEMO

To:	Mr. Peter Lisichenko, On-Scene Coordinator Superfund and Emergency Management Division U.S. EPA, Region II
From:	Smita Sumbaly, Data Reviewer START V, Region II
Subject:	789 Upper Mountain Road Site Data Validation Assessment
Date:	October 12, 2020

The purpose of this memo is to transmit the following information:

- Data validation results for the following parameters:

Full TAL and Herbicides	13 Samples
Full TCLP & RCRA Characteristics	3 Samples

- Matrices and Number of Samples

Soil/Rock/Slag	16 Samples

- Sampling Dates: August 25 and 26, 2020

The final data assessment narrative and original analytical data package are attached.

cc:	START V SPM:	Bernard Nwosu
	START V SITE FILE TD #:	TO-0036-0019
	START V ANALYTICAL TD #:	TO-0036-0054
	TASK#:	2054

U.S. ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

DATE: **October 12, 2020**

TO: **Mr. Peter Lisichenko**
U.S. EPA, Region II

FROM: **Smita Sumbaly**
START V Data Review Team

SUBJECT: **QA/QC Compliance Review Summary**

As requested quality control and performance measures for the data packages noted have been examined and compared to the U.S. Environmental Protection Agency, Region II (EPA) standards for compliance. Measures for the following general areas were evaluated as applicable:

Data Completeness	Holding Time
Instrument Tuning	Calibration, Initial
Internal Standard	Calibration, Continuing
Blanks	MS/MSD
Laboratory Control Sample	Field Duplicate
Surrogate Recovery	Sample Quantification
Compound Identification	ICP Serial Dilution

Summary of Results

	TAL/TCLP VOCs	TAL/TCLP SVOCs	TAL/TCLP Pesticides	TAL PCBs	Herbicides/ TCLP Herbicides	TAL/TCLP Metals & RCRA
Acceptable as Submitted						
Acceptable with Comments	X	X	X	X	X	X
Unacceptable, Action Pending						
Unacceptable						

Data Reviewed by: Smita Sumbaly Date: 10/05/2020

Approved By: Date: 10/12/2020

Area Code/Phone No.: (732) 585-4410

NARRATIVE

TASK No/RFP No.: 2054/631

SITE NAME: 789 Upper Mountain Road Site
Lewiston
Niagara County
New York

Laboratory Name: Chemtech Consulting Group, Inc., 284 Sheffield Street, Mountainside, New Jersey 07092.

INTRODUCTION:

The laboratory's portion of this case consisted of 13 soil/rock/slag samples, including one field duplicate, for target analyte list (TAL) volatiles, semivolatiles, pesticides, PCBs, metals, including mercury and cyanide; herbicides; and three soil/rock/slag samples, including one field duplicate for Resource Conservation and Recovery Act (RCRA) characteristics; and toxicity characteristic leaching procedure (TCLP) SVOCs, TCLP pesticides, TCLP herbicides, and TCLP metals plus mercury analyses. All samples were collected on August 25 and 26, 2020. The Chemtech Consulting Group, Inc. order numbers are L3823, L3827, and L3837.

The laboratory reported No problem(s) with the receipt of these samples.

The laboratory reported No problems with analyses of Full TAL (VOCs/SVOCs/pesticides/PCBs/TAL metals, mercury, cyanide/ and herbicides), Full TCLP (VOCs/SVOCs/pesticides/herbicides, metals + mercury), and RCRA characteristics.

The evaluator has commented on the criteria specified under each fraction heading. All criteria have been assessed, but no discussion is given where the evaluator has determined that criteria were adequately performed or require no comment. Details relevant to these comments are given on the following forms.

Any statistical measures used to support the following conclusions are attached so that the information may be reviewed by others.

Organic:

_Y_ Holding Time	_Y_ MS/MSD
_Y_ Compound ID (HSL, TIC)	_Y_ Calibration, Initial
_Y_ Calibration, Continuing	_Y_ Standards
_Y_ Blank	_Y_ Chromatography
_Y_ Surrogate Recovery	_Y_ Data Completeness
_Y_ Laboratory Control Sample	

Comments:

1. Refer to Data Assessment Narrative.

Inorganic:

_Y_ Data Completeness	_Y_ Holding Time
_Y_ Calibration, Initial	_Y_ Matrix Spike
_Y_ Calibration, Continuing	_Y_ Laboratory Duplicate
_Y_ Blanks	_Y_ ICP Interference Check
_Y_ Laboratory Control Sample	_Y_ Serial Dilution
_Y_ Field Duplicate	_

Comments: Refer to Data Assessment Narrative.

REGION II START V DATA ASSESSMENT REPORT

SITE: 789 Upper Mountain Road Site

Lab Order No.: L3823 and L3827 **No. of Samples/Matrix:** 16 - Soil/Rock/Slag

LAB: Chemtech Consulting Group, Mountainside, New Jersey

ANALYSIS: Target Analyte List (TAL) Volatile Organic Compounds (VOCs) and Toxicity Characteristic Leaching Procedure (TCLP) VOCs.

CONTRACTOR: Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V)

The following table summarizes the analytical methods used for the requested analyses and the U.S. Environmental Protection Agency, Region II (EPA) data validation standard operating procedures (SOPs) used for data validation.

Analysis	Analytical Method	Data Validation SOP No.
TAL VOCs & TCLP VOCs	SW-846 Method 8260C	HW-24 (Revision 4), October 2014

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various quality control (QC) problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer Signature: Smita Sumbaly **Date:** 10/12/2020

Verified By: _____ **Date:** 10/12/2020

From August 25 through 27, 2020, EPA and START V sampling personnel collected 13 soil/Rock/Slag samples, including one field duplicate, for TAL VOC and three soil/rock/slag samples, including one field duplicate for TCLP VOCs. All the samples were collected from the 789 Upper Mountain Road Site, located at Lewiston, Niagara County, New York. The samples were hand-delivered under chain of custody (COC) for the requested analyses to Chemtech Consulting Group located in Mountainside, New Jersey. The laboratory verified that samples were received intact, properly sealed, and refrigerated. Sample coolers temperature measured at 2.7 and 2.2 degree Celsius (°C) respectively.

Field Sample ID	Lab Sample ID	Matrix	Analysis	Sampling Date
Sample Delivery Group No. L3823				
789UMR-DSP02-01	L3823-01	Soil/Rock/Slag	TCLP Volatiles	08/26/2020
789UMR-TP05-0612-01	L3823-04	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP05-1218-01	L3823-05	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP05-1824-01	L3823-06	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP05-3036-01	L3823-07	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP06-0006-01	L3823-08	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP12-0002-01	L3823-09	Soil/Rock/Slag	TAL Volatiles	08/26/2020
789UMR-TP13-0612-01	L3823-10	Soil/Rock/Slag	TAL Volatiles	08/26/2020
Sample Delivery Group No. L3827				
789UMR-DSP01-01	L3827-01	Soil/Rock/Slag	TCLP Volatiles	08/25/2020
789UMR-DSP01-02[1]	L3827-04	Soil/Rock/Slag	TCLP Volatiles	08/25/2020
789UMR-TP07-1218-01	L3827-05	Soil/Rock/Slag	TAL Volatiles	08/25/2020
789UMR-TP08-1824-01	L3827-06	Soil/Rock/Slag	TAL Volatiles	08/25/2020
789UMR-TP11-0006-01	L3827-07	Soil/Rock/Slag	TAL Volatiles	08/25/2020
789UMR-TP11-0006-02[2]	L3827-10	Soil/Rock/Slag	TAL Volatiles	08/25/2020
789UMR-TP11-0612-01	L3827-11	Soil/Rock/Slag	TAL Volatiles	08/25/2020
789UMR-TP11-2430-01	L3827-12	Soil/Rock/Slag	TAL Volatiles	08/25/2020

[1] A field duplicate of sample 789UMR-DSP01-01
[2] A field duplicate of sample 789UMR-TP11-0006-01

DATA ASSESSMENT

ANALYSIS: TAL VOC, TCLP VOC

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

SDG No.: L3823

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

2. SURROGATE COMPOUNDS
All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured recovery limits were outside laboratory in-house control limits, qualifications were applied as per HW-24 (Revision 4), October 2014 to sample analytes as shown below.

SDG No.: L3823
TAL VOCs: The recovery of the surrogate compound 1,2-dichloroethane-d4 exceeded laboratory control limit in the analysis of sample 789UMR-TP05-1218-01. Since all analytes were not detected in sample 789UMR-TP05-1218-01, no action was required.

TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to sample analytes as shown below.

The laboratory conducted a full list spike for MS/MSD sample DUNR-TS001-01 and compared the recoveries to in-house recovery limits.

SDG No.: L3823
TAL VOCs: There was no MS/MSD analyses associated with the soil samples.
TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: Sample 789UMR-TP11-0006-01 was used for the MS/MSD analyses. No problems were found for this criterion.

TCLP VOCs: Sample 789UMR-DSP01-01 was used for the MS/MSD analyses. No problems were found for this criterion.

4. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of

contamination present in the QA blanks, the analytes are qualified as per HW-24 (Revision 4), October 2014.

A) Method blank contamination:

SDG No.: L3823

TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

B) Field or rinse blank contamination:

None was collected.

C) Trip blank contamination for Volatile Organic Analysis (VOA) aqueous samples:

Not applicable.

D) Storage Blank associated with VOA samples only:

There was no evidence that the laboratory analyzed any.

E) Tentatively Identified Compounds (TICs):

TICs were not identified for VOA samples. Therefore, TICs were not reported for VOA samples on Form Is.

5. MASS SPECTROMETER TUNING:
Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for volatile organics is bromofluorobenzene (BFB). If the mass calibration is in error, all associated data will be classified as unusable "R". Qualifications were applied to the samples and analytes as shown below.

SDG No.: L3823
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:
The response factor measures the instrument's response to specific chemical compounds. All analytes for initial and continuing calibration should meet the minimum relative response factor (RRF) criteria as listed in Method 8260C. If RRF is less than minimum requirement for any target analyte, the undetected analyte will be rejected (R) and the positive result estimated (J) for sample(s) associated the non-compliant calibration.

SDG No.: L3823
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):
Percent RSD is calculated for the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration verification (CCV) standard to the mean RRF from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be ≤20 for all target analytes. For the opening or closing CCV, %D must be ≤20 for all target analytes. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, positive results are flagged as estimated (J) and non-detects (UJ) for %D values outside criteria. If %RSD exceeds QC criteria, positive results may be estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the sample analytes as shown below.

SDG No.: L3823
TAL VOCs: For initial calibration performed on August 21, 2020 at 10:58, the %RSD was greater than (>)20% for methylene chloride. Since this analyte was not detected in the associated samples, data qualifications were not applied. As per Method 8260C, linear curves are allowed when the RSD exceeds acceptance criterion and the validation acceptance criteria for linear curve correlation coefficient (r2) is > 0.99.

TAL VOCs: In the subsequent CCVs based on average response factor (ARF) or continuing calibration response factor (CCRF), the %D was >20% for 1,2-dichloroethane (analyzed on 8/28/2020@11:03). 1,2-dichloroethane results were estimated (J or UJ) for samples 789UMR-TP12-0002-01 and 789UMR-TP13-0612-01.

TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827

TAL VOCs: For initial calibration performed on August 21, 2020 at 10:58, the %RSD was > 20% for methylene chloride. Since this analyte was not detected in the associated samples, data qualifications were not applied. As per Method 8260C, linear curves are allowed when the RSD exceeds acceptance criterion and the validation acceptance criteria for linear curve correlation coefficient (r2) is > 0.99.

TAL VOCs: In the subsequent CCVs based on ARF or CCRF, the %D was >20% for 1,2-dichloroethane (analyzed on 8/28/2020@11:03). 1,2-dichloroethane results were estimated (J or UJ) for samples 789UMR-TP07-1218-01, 789UMR-TP08-1824-01, 789UMR-TP11-0006-01, 789UMR-TP11-0006-02, 789UMR-TP11-0612-01, and 789UMR-TP11-2430-01.

TCLP VOCs: No problems were found for this criterion.

7. INTERNAL STANDARDS PERFORMANCE GC/MS:

Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range of -50% to 100% of the associated continuing calibration internal standard area. The retention time of the internal standards must be within ± 0.5 minute of that in the associated CCV. If the area count is greater than the control limit, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the control limit, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time was not within the control limits, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample analysis. Qualifications were applied to sample analytes as shown below.

SDG No.: L3823

TAL VOCs: The following sample have internal standard area counts that are less than (<)20% of the CCV. Using professional judgment, detected VOC results are qualified estimated with a high bias (J+) and non-detected VOC results were rejected (R) in the following samples:

Pentafluorobenzene (IS1): 789UMR-TP05-1218-01- analysis of this sample was not reported
Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, Chloroethane, Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, Tert Butyl Alcohol, 1,1-Dichloroethene, Acrolein, Acrylonitrile, Acetone, Carbon Disulfide, Methyl tert-butyl ether, Methyl Acetate, Methylene Chloride, trans-1,2-Dichloroethene, 1,1-Dichloroethane, Cyclohexane, 2-Butanone, cis-1,2-Dichloroethene, Bromochloromethane, Chloroform, and 1,1,1-Trichloroethane.

1,4-Difluorobenzene (IS2): 789UMR-TP05-1218-01- analysis of this sample was not reported
Carbon Tetrachloride, Methylcyclohexane, Benzene, 1,2-Dichloroethane, Trichloroethene, 1,2-Dichloropropane, Bromodichloromethane, 4-Methyl-2-pentanone, Toluene, trans-1,3-Dichloropropene, cis-1,3-Dichloropropene, 1,1,2-Trichloroethane, 2-Hexanone, Dibromochloromethane, and 1,2-Dibromoethane

Chlorobenzene-d5 (IS3): 789UMR-TP05-1218-01- analysis of this sample was not reported
Tetrachloroethene, Chlorobenzene, Ethylbenzene, m/p-Xylene, o-Xylene, Styrene, and Bromoform

1,4-Dichlorobenzene-d4 (IS4): 789UMR-TP05-1218-01- analysis of this sample was not reported
Isopropylbenzene, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene

TAL VOCs: The following samples have internal standard area counts that are >20% but < 50%, the lower limit of primary criteria. Detected compounds are qualified (J+). Non-detected compounds are qualified (UJ).

Pentafluorobenzene (IS1): 789UMR-TP05-1218-01RE
Dichlorodifluoromethane, Chloromethane, Vinyl Chloride, Bromomethane, Chloroethane, Trichlorofluoromethane, 1,1,2-Trichlorotrifluoroethane, Tert Butyl Alcohol, 1,1-Dichloroethene, Acrolein, Acrylonitrile, Acetone, Carbon Disulfide, Methyl tert-butyl ether, Methyl Acetate, Methylene Chloride, trans-1,2-Dichloroethene, 1,1-Dichloroethane, Cyclohexane, 2-Butanone, cis-1,2-Dichloroethene, Bromochloromethane, Chloroform, and 1,1,1-Trichloroethane.

1,4-Difluorobenzene (IS2): 789UMR-TP05-1218-01RE
Carbon Tetrachloride, Methylcyclohexane, Benzene, 1,2-Dichloroethane[1], Trichloroethene, 1,2-Dichloropropane, Bromodichloromethane, 4-Methyl-2-pentanone, Toluene, trans-1,3-Dichloropropene, cis-1,3-Dichloropropene, 1,1,2-Trichloroethane, 2-Hexanone, Dibromochloromethane, and 1,2-Dibromoethane

[1] 1,2-dichloroethane in sample 789UMR-TP08-1218-01RE was previously qualified due to non-compliance of continuing calibration criteria, therefore, no further action was required.

Chlorobenzene-d5 (IS3): 789UMR-TP05-1218-01RE
Tetrachloroethene, Chlorobenzene, Ethylbenzene, m/p-Xylene, o-Xylene, Styrene, and Bromoform

1,4-Dichlorobenzene-d4 (IS4): 789UMR-TP05-1218-01RE
Isopropylbenzene, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, and 1,2,3-Trichlorobenzene

TCLP VOCs: No problems were found for this criterion.

SDG No.: L3827
TAL VOCs: No problems were found for this criterion.
TCLP VOCs: No problems were found for this criterion.

8. FIELD DUPLICATES:

SDG No.: L3823
Not Applicable

SDG No.: L3827
TAL VOCs: For TAL VOCs, samples 789UMR-TP11-0006-01 and 789UMR-TP11-0006-02 were used for duplicate analysis which yielded comparable results.

TCLP VOCs: For TCLP VOCs, samples 789UMR-DSP01-01 and 789UMR-DSP01-02 were used for duplicate analysis which yielded comparable results.

9. COMPOUND IDENTIFICATION:
Target compounds are identified on the GC/MS by using the analyte relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the standard compound and have an ion spectrum which has a ratio of the primary and secondary m/z intensities within 20% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

SDG No.: L3823
TICs identified and reported by the laboratory with a poor match compared to the reference spectra (<85% match) were changed to "Unknown" by the validator and results were qualified as estimated (J) (refer to qualified Form Is).

SDG No.: L3827
No TICS were reported in this SDG.

10. METHOD NON-COMPLIANCE:

SDG No.: L3823 and L3827
None.

11. FIELD DOCUMENTATION:

SDG No.: L3823 and L3827
No problems were found for this criterion.

12. OTHER PROBLEMS:

SDG No.: L3823 and L3827
As per case narrative, sample analysis was performed by Method 8260C. However, the laboratory used the %RSD less than or equal to (≤) 15, a requirement for Method 8260B, to assess initial calibration results. The data validation and qualification was based on requirement of %RSD ≤20 established in Method 8260C.

SDG No.: L3823
TAL VOCs: Blank spike VD0827SBS01 (file VD066431.D) analyzed on 8/27/2020 yielded percent recoveries (%R) within the QC limits, data qualification was not required.

SDG No.: L3823 and L3827

TAL VOCs: Blank spike VD0828SBS01 (file VD066453.D) analyzed on 8/28/2020 yielded %R within the QC limits, data qualification was not required.

TCLP VOCs: Blank spike VX0828WBS01 (file VX018109.D) analyzed on 8/28/2020 yielded %R within the QC limits, data qualification was not required.

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a re-analysis.

SDG No.: L3823
789UMR-TP05-1218-01RE

SDG No.: L3827
None

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01RE	789UMR-TP05-1824-01	789UMR-TP05-3036-01
Lab sample ID No.:	L3823-04	L3823-05RE	L3823-06	L3823-07
Sample weight (g)	6.62	6.68	7.71	6.91
Percent Moisture	5.6	7	0.2	1
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Dichlorodifluoromethane	1.2 U	1.2 UJ	0.95 U	1.1 U
Chloromethane	1.8 U	1.8 UJ	1.4 U	1.6 U
Vinyl Chloride	1.1 U	1.1 UJ	0.9 U	1 U
Bromomethane	1 U	1 UJ	0.85 U	0.95 U
Chloroethane	1.3 U	1.3 UJ	1.1 U	1.2 U
Trichlorofluoromethane	1.2 U	1.2 UJ	0.97 U	1.1 U
1,1,2-Trichlorotrifluoroethane	1.3 U	1.3 UJ	1.1 U	1.2 U
1,1-Dichloroethene	1.1 U	1.1 UJ	0.92 U	1 U
Acetone	4.9 U	4.9 UJ	4 U	4.4 U
Carbon Disulfide	0.78 U	0.78 UJ	0.63 U	0.71 U
Methyl tert-butyl Ether	1.1 U	1.1 UJ	0.92 U	1 U
Methyl Acetate	1.3 U	1.3 UJ	1.1 U	1.2 U
Methylene Chloride	4.6 U	4.6 UJ	3.7 U	4.2 U
trans-1,2-Dichloroethene	1.3 U	1.3 UJ	1 U	1.2 U
1,1-Dichloroethane	0.75 U	0.76 UJ	0.61 U	0.69 U
Cyclohexane	1.4 U	1.4 UJ	1.1 U	1.2 U
2-Butanone	6.6 U	6.7 UJ	5.4 U	6.1 U
Carbon Tetrachloride	0.71 U	0.72 UJ	0.58 U	0.65 U
cis-1,2-Dichloroethene	1.1 U	1.1 UJ	0.91 U	1 U
Bromochloromethane	0.84 U	0.84 UJ	0.68 U	0.77 U
Chloroform	1 U	1 UJ	0.83 U	0.93 U
1,1,1-Trichloroethane	0.61 U	0.61 UJ	0.49 U	0.56 U
Methylcyclohexane	0.37 U	0.37 UJ	0.3 U	0.34 U
Benzene	0.68 U	0.69 UJ	0.55 U	0.62 U
1,2-Dichloroethane	0.73 U	0.73 UJ	0.59 U	0.67 U
Trichloroethene	0.68 U	0.68 UJ	0.55 U	0.62 U
1,2-Dichloropropane	0.71 U	0.71 UJ	0.57 U	0.65 U
Bromodichloromethane	0.72 U	0.73 UJ	0.59 U	0.66 U
4-Methyl-2-Pentanone	5.6 U	5.6 UJ	4.5 U	5.1 U

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01RE	789UMR-TP05-1824-01	789UMR-TP05-3036-01
Lab sample ID No.:	L3823-04	L3823-05RE	L3823-06	L3823-07
Sample weight (g)	6.62	6.68	7.71	6.91
Percent Moisture	5.6	7	0.2	1
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Toluene	0.69 U	0.69 UJ	0.56 U	0.63 U
t-1,3-Dichloropropene	0.86 U	0.87 UJ	0.7 U	0.79 U
cis-1,3-Dichloropropene	0.78 U	0.79 UJ	0.64 U	0.72 U
1,1,2-Trichloroethane	0.79 U	0.8 UJ	0.65 U	0.73 U
2-Hexanone	7.1 U	7.1 UJ	5.7 U	6.4 U
Dibromochloromethane	0.85 U	0.86 UJ	0.69 U	0.78 U
1,2-Dibromoethane	0.74 U	0.75 UJ	0.6 U	0.68 U
Tetrachloroethene	0.7 U	0.7 UJ	0.57 U	0.64 U
Chlorobenzene	0.72 U	0.72 UJ	0.58 U	0.65 U
Ethyl Benzene	0.83 U	0.83 UJ	0.67 U	0.76 U
m/p-Xylenes	1.7 U	1.7 UJ	1.4 U	1.6 U
o-Xylene	0.8 U	0.8 UJ	0.65 U	0.73 U
Styrene	1.1 U	1.1 UJ	0.9 U	1 U
Bromoform	0.96 U	0.97 UJ	0.78 U	0.88 U
Isopropylbenzene	0.91 U	0.91 UJ	0.74 U	0.83 U
1,1,2,2-Tetrachloroethane	0.85 U	0.86 UJ	0.69 U	0.78 U
1,3-Dichlorobenzene	1 U	1 UJ	0.84 U	0.94 U
1,4-Dichlorobenzene	0.68 U	0.69 UJ	0.55 U	0.62 U
1,2-Dichlorobenzene	0.83 U	0.84 UJ	0.68 U	0.76 U
1,2-Dibromo-3-Chloropropane	3.1 U	3.1 UJ	2.5 U	2.8 U
1,2,4-Trichlorobenzene	0.99 U	0.99 UJ	0.8 U	0.9 U
1,2,3-Trichlorobenzene	0.97 U	0.97 UJ	0.78 U	0.88 U

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01
Lab sample ID No.:	L3823-08	L3827-05	L3827-06	L3827-07
Sample weight (g)	4.94	5.28	5.56	6.61
Percent Moisture	15.7	7.7	6.5	8.3
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Dichlorodifluoromethane	1.8 U	1.5 U	1.4 U	1.2 U
Chloromethane	2.7 U	2.3 U	2.1 U	1.8 U
Vinyl Chloride	1.7 U	1.4 U	1.3 U	1.1 U
Bromomethane	1.6 U	1.3 U	1.3 U	1.1 U
Chloroethane	2 U	1.7 U	1.6 U	1.4 U
Trichlorofluoromethane	1.8 U	1.5 U	1.4 U	1.2 U
1,1,2-Trichlorotrifluoroethane	2 U	1.7 U	1.6 U	1.4 U
1,1-Dichloroethene	1.7 U	1.5 U	1.4 U	1.2 U
Acetone	7.3 U	6.2 U	5.9 U	5 U
Carbon Disulfide	1.2 U	1 U	0.94 U	0.8 U
Methyl tert-butyl Ether	1.7 U	1.5 U	1.4 U	1.2 U
Methyl Acetate	2 U	1.7 U	1.6 U	1.3 U
Methylene Chloride	6.9 U	5.9 U	5.5 U	4.7 U
trans-1,2-Dichloroethene	1.9 U	1.6 U	1.5 U	1.3 U
1,1-Dichloroethane	1.1 U	0.97 U	0.91 U	0.78 U
Cyclohexane	2 U	1.8 U	1.6 U	1.4 U
2-Butanone	10 U	8.5 U	8 U	6.8 U
Carbon Tetrachloride	1.1 U	0.91 U	0.86 U	0.73 U
cis-1,2-Dichloroethene	1.7 U	1.4 U	1.3 U	1.1 U
Bromochloromethane	1.3 U	1.1 U	1 U	0.86 U
Chloroform	1.5 U	1.3 U	1.2 U	1.1 U
1,1,1-Trichloroethane	0.91 U	0.78 U	0.73 U	0.63 U
Methylcyclohexane	0.55 U	0.47 U	0.44 U	0.38 U
Benzene	1 U	0.88 U	0.82 U	0.7 U
1,2-Dichloroethane	1.1 U	0.93 UJ	0.88 UJ	0.75 UJ
Trichloroethene	1 U	0.87 U	0.82 U	0.7 U
1,2-Dichloropropane	1.1 U	0.91 U	0.85 U	0.73 U
Bromodichloromethane	1.1 U	0.92 U	0.87 U	0.74 U
4-Methyl-2-Pentanone	8.4 U	7.2 U	6.7 U	5.8 U

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01
Lab sample ID No.:	L3823-08	L3827-05	L3827-06	L3827-07
Sample weight (g)	4.94	5.28	5.56	6.61
Percent Moisture	15.7	7.7	6.5	8.3
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Toluene	1 U	0.88 U	0.83 U	0.71 U
t-1,3-Dichloropropene	1.3 U	1.1 U	1 U	0.89 U
cis-1,3-Dichloropropene	1.2 U	1 U	0.94 U	0.81 U
1,1,2-Trichloroethane	1.2 U	1 U	0.96 U	0.82 U
2-Hexanone	10.6 U	9.1 U	8.5 U	7.3 U
Dibromochloromethane	1.3 U	1.1 U	1 U	0.88 U
1,2-Dibromoethane	1.1 U	0.95 U	0.89 U	0.77 U
Tetrachloroethene	1 U	0.9 U	0.84 U	0.72 U
Chlorobenzene	1.1 U	0.92 U	0.86 U	0.74 U
Ethyl Benzene	1.2 U	1.1 U	0.99 U	0.85 U
m/p-Xylenes	2.6 U	2.2 U	2.1 U	**2.8 J**
o-Xylene	1.2 U	1 U	0.96 U	**1.3 J**
Styrene	1.7 U	1.4 U	1.3 U	1.1 U
Bromoform	1.4 U	1.2 U	1.2 U	0.99 U
Isopropylbenzene	1.4 U	1.2 U	1.1 U	0.94 U
1,1,2,2-Tetrachloroethane	1.3 U	1.1 U	1 U	0.88 U
1,3-Dichlorobenzene	1.5 U	1.3 U	1.2 U	1.1 U
1,4-Dichlorobenzene	1 U	0.87 U	0.82 U	0.7 U
1,2-Dichlorobenzene	1.2 U	1.1 U	1 U	0.86 U
1,2-Dibromo-3-Chloropropane	4.7 U	4 U	3.7 U	3.2 U
1,2,4-Trichlorobenzene	1.5 U	1.3 U	1.2 U	1 U
1,2,3-Trichlorobenzene	1.4 U	1.2 U	1.2 U	1 U

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01
Lab sample ID No.:	L3827-10	L3827-11	L3827-12	L3823-09
Sample weight (g)	6.47	6.55	6.16	7.2
Percent Moisture	13.3	4.3	6.1	4.8
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Dichlorodifluoromethane	1.3 U	1.2 U	1.3 U	1.1 U
Chloromethane	2 U	1.8 U	1.9 U	1.6 U
Vinyl Chloride	1.2 U	1.1 U	1.2 U	1 U
Bromomethane	1.2 U	1 U	1.1 U	0.95 U
Chloroethane	1.5 U	1.3 U	1.4 U	1.2 U
Trichlorofluoromethane	1.3 U	1.2 U	1.3 U	1.1 U
1,1,2-Trichlorotrifluoroethane	1.5 U	1.3 U	1.4 U	1.2 U
1,1-Dichloroethene	1.3 U	1.1 U	1.2 U	1 U
Acetone	5.4 U	4.9 U	5.3 U	4.4 U
Carbon Disulfide	0.87 U	0.78 U	0.84 U	0.71 U
Methyl tert-butyl Ether	1.3 U	1.1 U	1.2 U	1 U
Methyl Acetate	1.4 U	1.3 U	1.4 U	1.2 U
Methylene Chloride	5.1 U	4.6 U	4.9 U	4.2 U
trans-1,2-Dichloroethene	1.4 U	1.3 U	1.4 U	1.2 U
1,1-Dichloroethane	0.84 U	0.75 U	0.82 U	0.69 U
Cyclohexane	1.5 U	1.4 U	1.5 U	1.2 U
2-Butanone	7.4 U	6.6 U	7.2 U	6.1 U
Carbon Tetrachloride	0.79 U	0.71 U	0.77 U	0.65 U
cis-1,2-Dichloroethene	1.2 U	1.1 U	1.2 U	1 U
Bromochloromethane	0.93 U	0.84 U	0.91 U	0.76 U
Chloroform	1.1 U	1 U	1.1 U	0.93 U
1,1,1-Trichloroethane	0.68 U	0.61 U	0.66 U	0.56 U
Methylcyclohexane	0.41 U	0.37 U	0.4 U	0.34 U
Benzene	0.76 U	0.68 U	0.74 U	0.62 U
1,2-Dichloroethane	0.81 UJ	0.73 UJ	0.79 UJ	0.66 UJ
Trichloroethene	0.76 U	0.68 U	0.73 U	0.62 U
1,2-Dichloropropane	0.79 U	0.7 U	0.76 U	0.64 U
Bromodichloromethane	0.8 U	0.72 U	0.78 U	0.66 U
4-Methyl-2-Pentanone	6.2 U	5.6 U	6 U	5.1 U

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01
Lab sample ID No.:	L3827-10	L3827-11	L3827-12	L3823-09
Sample weight (g)	6.47	6.55	6.16	7.2
Percent Moisture	13.3	4.3	6.1	4.8
Dilution Factor	1	1	1	1
TAL VOLATILES - (ug/Kg)				
Toluene	0.77 U	0.68 U	0.74 U	0.63 U
t-1,3-Dichloropropene	0.96 U	0.86 U	0.93 U	0.78 U
cis-1,3-Dichloropropene	0.87 U	0.78 U	0.85 U	0.71 U
1,1,2-Trichloroethane	0.89 U	0.79 U	0.86 U	0.72 U
2-Hexanone	7.9 U	7 U	7.6 U	6.4 U
Dibromochloromethane	0.95 U	0.85 U	0.92 U	0.77 U
1,2-Dibromoethane	0.83 U	0.74 U	0.8 U	0.68 U
Tetrachloroethene	0.78 U	0.7 U	0.75 U	0.64 U
Chlorobenzene	0.8 U	0.71 U	0.77 U	0.65 U
Ethyl Benzene	0.92 U	0.82 U	0.89 U	0.75 U
m/p-Xylenes	**2.7 J**	1.7 U	1.9 U	1.6 U
o-Xylene	**1.2 J**	0.79 U	0.86 U	0.73 U
Styrene	1.2 U	1.1 U	1.2 U	1 U
Bromoform	1.1 U	0.96 U	1 U	0.88 U
Isopropylbenzene	1 U	0.91 U	0.98 U	0.83 U
1,1,2,2-Tetrachloroethane	0.95 U	0.85 U	0.92 U	0.78 U
1,3-Dichlorobenzene	1.2 U	1 U	1.1 U	0.94 U
1,4-Dichlorobenzene	0.76 U	0.68 U	0.74 U	0.62 U
1,2-Dichlorobenzene	0.93 U	0.83 U	0.9 U	0.76 U
1,2-Dibromo-3-Chloropropane	3.5 U	3.1 U	3.4 U	2.8 U
1,2,4-Trichlorobenzene	1.1 U	0.98 U	1.1 U	0.9 U
1,2,3-Trichlorobenzene	1.1 U	0.96 U	1 U	0.88 U

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag
START V Sample No.:	789UMR-TP13-0612-01
Lab sample ID No.:	L3823-10
Sample weight (g)	7.09
Percent Moisture	6.5
Dilution Factor	1
TAL VOLATILES - (ug/Kg)	
Dichlorodifluoromethane	1.1 U
Chloromethane	1.7 U
Vinyl Chloride	1 U
Bromomethane	0.98 U
Chloroethane	1.2 U
Trichlorofluoromethane	1.1 U
1,1,2-Trichlorotrifluoroethane	1.2 U
1,1-Dichloroethene	1.1 U
Acetone	4.6 U
Carbon Disulfide	0.74 U
Methyl tert-butyl Ether	1.1 U
Methyl Acetate	1.2 U
Methylene Chloride	4.3 U
trans-1,2-Dichloroethene	1.2 U
1,1-Dichloroethane	0.71 U
Cyclohexane	1.3 U
2-Butanone	6.3 U
Carbon Tetrachloride	0.67 U
cis-1,2-Dichloroethene	1.1 U
Bromochloromethane	0.79 U
Chloroform	0.96 U
1,1,1-Trichloroethane	0.57 U
Methylcyclohexane	0.35 U
Benzene	0.64 U
1,2-Dichloroethane	0.69 UJ
Trichloroethene	0.64 U
1,2-Dichloropropane	0.67 U
Bromodichloromethane	0.68 U
4-Methyl-2-Pentanone	5.3 U

TAL Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag
START V Sample No.:	789UMR-TP13-0612-01
Lab sample ID No.:	L3823-10
Sample weight (g)	7.09
Percent Moisture	6.5
Dilution Factor	1
TAL VOLATILES - (ug/Kg)	
Toluene	0.65 U
t-1,3-Dichloropropene	0.81 U
cis-1,3-Dichloropropene	0.74 U
1,1,2-Trichloroethane	0.75 U
2-Hexanone	6.7 U
Dibromochloromethane	0.8 U
1,2-Dibromoethane	0.7 U
Tetrachloroethene	0.66 U
Chlorobenzene	0.68 U
Ethyl Benzene	0.78 U
m/p-Xylenes	1.6 U
o-Xylene	0.75 U
Styrene	1 U
Bromoform	0.91 U
Isopropylbenzene	0.86 U
1,1,2,2-Tetrachloroethane	0.8 U
1,3-Dichlorobenzene	0.97 U
1,4-Dichlorobenzene	0.64 U
1,2-Dichlorobenzene	0.78 U
1,2-Dibromo-3-Chloropropane	2.9 U
1,2,4-Trichlorobenzene	0.93 U
1,2,3-Trichlorobenzene	0.91 U

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Cover Page

Order ID : L3823

Project ID : RFP 631

Client : Weston Solutions, Inc.

Lab Sample Number	Client Sample Number
L3823-01	789UMR-DSP02-01
L3823-02	789UMR-DSP02-01MS
L3823-03	789UMR-DSP02-01MSD
L3823-04	789UMR-TP05-0612-01
L3823-05	789UMR-TP05-1218-01
L3823-06	789UMR-TP05-1824-01
L3823-07	789UMR-TP05-3036-01
L3823-08	789UMR-TP06-0006-01
L3823-09	789UMR-TP12-0002-01
L3823-10	789UMR-TP13-0612-01

I certify that the 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. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : N. N. Pandya

APPROVED Date: 9/4/2020
By Nimisha Pandya, QA/QC Supervisor at 2:00 pm, Sep 08, 2020

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

CHEMTECH
284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3823
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
10 Solid samples were received on 08/27/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: TCLP VOA, TCLP ZHE Extraction and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260C.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for 789UMR-TP05-1218-01 [1,2-Dichloroethane-d4 - 178%], the failure samples in surrogates was reanalyzed to confirm the results as per method and reported in the data.

The Internal Standards Areas met the acceptable requirements except for 789UMR-TP05-1218-01 and 789UMR-TP05- 1218-01RE, the failure samples in internal standard was reanalyzed to confirm the results as per method and reported in the data.

The Retention Times were acceptable for all samples.
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank Spike Duplicate met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.

The % RSD is greater than 15% in the Initial Calibration method (82D082120S.M) for Methylene Chloride this compound is passing on Linear Regression.

The Continuous Calibration File ID VD066451.D met the requirements except for 1,2-Dichloroethane and 1,2-Dichloroethane-d4 are failing high but no positive hit in any associated samples so no corrective action taken.

The Tuning criteria met requirements.

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E. Low Level Soil/Sediment Calculation :

Concentration in ug/Kg dry Weight basis) = $\frac{(Ax)(Is)(Df)}{(Ais)(RRF)(Ws)(D)}$

Where,
Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in Nano grams (ng)
RRF = Relative response factor of the calibration standard.
Df = Dilution factor
Ws= Weight of sample
D= $\frac{100 - \%moisture}{100}$

F. Additional Comments:
Samples for MS/MSD for VOC analysis were not provided with this set of samples. The Blank Spike Duplicate is reported with the data.

Trip Blank was not provided with this set of samples.
The soil samples results are based on a dry weight basis.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:00 pm, Sep 08, 2020

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DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

QA Control # A3040960

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: L3823

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: APARNA SONI **Date:** 09/08/2020

2nd Level QA Review Signature: N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:01 pm, Sep 08, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3823
Lab Sample ID:	L3823-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.6
Sample Wt/Vol:	6.62 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066444.D	1		08/27/20 18:38	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.20	U	1.20	4.00	ug/Kg
74-87-3	Chloromethane	1.80	U	1.80	4.00	ug/Kg
75-01-4	Vinyl Chloride	1.10	U	1.10	4.00	ug/Kg
74-83-9	Bromomethane	1.00	U	1.00	4.00	ug/Kg
75-00-3	Chloroethane	1.30	U	1.30	4.00	ug/Kg
75-69-4	Trichlorofluoromethane	1.20	U	1.20	4.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.30	U	1.30	4.00	ug/Kg
75-35-4	1,1-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
67-64-1	Acetone	4.90	U	4.90	20.0	ug/Kg
75-15-0	Carbon Disulfide	0.78	U	0.78	4.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.10	U	1.10	4.00	ug/Kg
79-20-9	Methyl Acetate	1.30	U	1.30	4.00	ug/Kg
75-09-2	Methylene Chloride	4.60	U	4.60	8.00	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.30	U	1.30	4.00	ug/Kg
75-34-3	1,1-Dichloroethane	0.75	U	0.75	4.00	ug/Kg
110-82-7	Cyclohexane	1.40	U	1.40	4.00	ug/Kg
78-93-3	2-Butanone	6.60	U	6.60	20.0	ug/Kg
56-23-5	Carbon Tetrachloride	0.71	U	0.71	4.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
74-97-5	Bromochloromethane	0.84	U	0.84	4.00	ug/Kg
67-66-3	Chloroform	1.00	U	1.00	4.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.61	U	0.61	4.00	ug/Kg
108-87-2	Methylcyclohexane	0.37	U	0.37	4.00	ug/Kg
71-43-2	Benzene	0.68	U	0.68	4.00	ug/Kg
107-06-2	1,2-Dichloroethane	0.73	U	0.73	4.00	ug/Kg
79-01-6	Trichloroethene	0.68	U	0.68	4.00	ug/Kg
78-87-5	1,2-Dichloropropane	0.71	U	0.71	4.00	ug/Kg
75-27-4	Bromodichloromethane	0.72	U	0.72	4.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.60	U	5.60	20.0	ug/Kg
108-88-3	Toluene	0.69	U	0.69	4.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.86	U	0.86	4.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.78	U	0.78	4.00	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3823
Lab Sample ID:	L3823-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.6
Sample Wt/Vol:	6.62 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066444.D	1		08/27/20 18:38	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.79	U	0.79	4.00	ug/Kg
591-78-6	2-Hexanone	7.10	U	7.10	20.0	ug/Kg
124-48-1	Dibromochloromethane	0.85	U	0.85	4.00	ug/Kg
106-93-4	1,2-Dibromoethane	0.74	U	0.74	4.00	ug/Kg
127-18-4	Tetrachloroethene	0.70	U	0.70	4.00	ug/Kg
108-90-7	Chlorobenzene	0.72	U	0.72	4.00	ug/Kg
100-41-4	Ethyl Benzene	0.83	U	0.83	4.00	ug/Kg
179601-23-1	m/p-Xylenes	1.70	U	1.70	8.00	ug/Kg
95-47-6	o-Xylene	0.80	U	0.80	4.00	ug/Kg
100-42-5	Styrene	1.10	U	1.10	4.00	ug/Kg
75-25-2	Bromoform	0.96	U	0.96	4.00	ug/Kg
98-82-8	Isopropylbenzene	0.91	U	0.91	4.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.85	U	0.85	4.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.00	U	1.00	4.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.68	U	0.68	4.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.83	U	0.83	4.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.10	U	3.10	4.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.99	U	0.99	4.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.97	U	0.97	4.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.5		50 - 163	115%	SPK: 50
1868-53-7	Dibromofluoromethane	51.1		54 - 147	102%	SPK: 50
2037-26-5	Toluene-d8	52.0		49 - 140	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.4		25 - 144	103%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	182000	7.97			
540-36-3	1,4-Difluorobenzene	257000	8.86			
3114-55-4	Chlorobenzene-d5	243000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	128000	13.58			

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Lab Sample ID:	L3823-04	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	5.6
Sample Wt/Vol:	6.62 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066444.D	1		08/27/20 18:38	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3823
Lab Sample ID:	L3823-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7
Sample Wt/Vol:	6.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

DO NOT USE THIS FORM I

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066445.D	1		08/27/20 19:06	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.20	U R	1.20	4.10	ug/Kg
74-87-3	Chloromethane	1.80	U	1.80	4.10	ug/Kg
75-01-4	Vinyl Chloride	1.10	U	1.10	4.10	ug/Kg
74-83-9	Bromomethane	1.10	U	1.10	4.10	ug/Kg
75-00-3	Chloroethane	1.30	U	1.30	4.10	ug/Kg
75-69-4	Trichlorofluoromethane	1.20	U	1.20	4.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.30	U	1.30	4.10	ug/Kg
75-35-4	1,1-Dichloroethene	1.20	U	1.20	4.10	ug/Kg
67-64-1	Acetone	5.00	U	5.00	20.5	ug/Kg
75-15-0	Carbon Disulfide	0.80	U	0.80	4.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.20	U	1.20	4.10	ug/Kg
79-20-9	Methyl Acetate	1.30	U	1.30	4.10	ug/Kg
75-09-2	Methylene Chloride	4.70	U	4.70	8.20	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.30	U	1.30	4.10	ug/Kg
75-34-3	1,1-Dichloroethane	0.77	U	0.77	4.10	ug/Kg
110-82-7	Cyclohexane	1.40	U	1.40	4.10	ug/Kg
78-93-3	2-Butanone	6.80	U	6.80	20.5	ug/Kg
56-23-5	Carbon Tetrachloride	0.73	U	0.73	4.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	4.10	ug/Kg
74-97-5	Bromochloromethane	0.86	U	0.86	4.10	ug/Kg
67-66-3	Chloroform	1.00	U	1.00	4.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.62	U	0.62	4.10	ug/Kg
108-87-2	Methylcyclohexane	0.38	U	0.38	4.10	ug/Kg
71-43-2	Benzene	0.70	U	0.70	4.10	ug/Kg
107-06-2	1,2-Dichloroethane	0.75	U	0.75	4.10	ug/Kg
79-01-6	Trichloroethene	0.70	U	0.70	4.10	ug/Kg
78-87-5	1,2-Dichloropropane	0.72	U	0.72	4.10	ug/Kg
75-27-4	Bromodichloromethane	0.74	U	0.74	4.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.70	U	5.70	20.5	ug/Kg
108-88-3	Toluene	0.70	U	0.70	4.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.88	U	0.88	4.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.80	U	0.80	4.10	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3823
Lab Sample ID:	L3823-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7
Sample Wt/Vol:	6.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

DO NOT USE FOR FORM I

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066445.D	1		08/27/20 19:06	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.81	U R	0.81	4.10	ug/Kg
591-78-6	2-Hexanone	7.20	U	7.20	20.5	ug/Kg
124-48-1	Dibromochloromethane	0.87	U	0.87	4.10	ug/Kg
106-93-4	1,2-Dibromoethane	0.76	U	0.76	4.10	ug/Kg
127-18-4	Tetrachloroethene	0.72	U	0.72	4.10	ug/Kg
108-90-7	Chlorobenzene	0.73	U	0.73	4.10	ug/Kg
100-41-4	Ethyl Benzene	0.85	U	0.85	4.10	ug/Kg
179601-23-1	m/p-Xylenes	1.80	U	1.80	8.20	ug/Kg
95-47-6	o-Xylene	0.82	U	0.82	4.10	ug/Kg
100-42-5	Styrene	1.10	U	1.10	4.10	ug/Kg
75-25-2	Bromoform	0.99	U	0.99	4.10	ug/Kg
98-82-8	Isopropylbenzene	0.93	U	0.93	4.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.87	U	0.87	4.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.10	U	1.10	4.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.70	U	0.70	4.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.85	U	0.85	4.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.20	U	3.20	4.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.00	U	1.00	4.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.99	U	0.99	4.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	89.0	*	50 - 163	178%	SPK: 50
1868-53-7	Dibromofluoromethane	58.5		54 - 147	117%	SPK: 50
2037-26-5	Toluene-d8	49.9		49 - 140	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	54.3		25 - 144	109%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	9890	7.97			
540-36-3	1,4-Difluorobenzene	13700	8.86			
3114-55-4	Chlorobenzene-d5	13200	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	8400	13.58			

9/11/2020

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Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066445.D	1		08/27/20 19:06	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1218-01RE	SDG No.:	L3823
Lab Sample ID:	L3823-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7
Sample Wt/Vol:	6.68 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066456.D	1		08/28/20 13:32	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.20	U J	1.20	4.00	ug/Kg
74-87-3	Chloromethane	1.80	U	1.80	4.00	ug/Kg
75-01-4	Vinyl Chloride	1.10	U	1.10	4.00	ug/Kg
74-83-9	Bromomethane	1.00	U	1.00	4.00	ug/Kg
75-00-3	Chloroethane	1.30	U	1.30	4.00	ug/Kg
75-69-4	Trichlorofluoromethane	1.20	U	1.20	4.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.30	U	1.30	4.00	ug/Kg
75-35-4	1,1-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
67-64-1	Acetone	4.90	U	4.90	20.1	ug/Kg
75-15-0	Carbon Disulfide	0.78	U	0.78	4.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.10	U	1.10	4.00	ug/Kg
79-20-9	Methyl Acetate	1.30	U	1.30	4.00	ug/Kg
75-09-2	Methylene Chloride	4.60	U	4.60	8.00	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.30	U	1.30	4.00	ug/Kg
75-34-3	1,1-Dichloroethane	0.76	U	0.76	4.00	ug/Kg
110-82-7	Cyclohexane	1.40	U	1.40	4.00	ug/Kg
78-93-3	2-Butanone	6.70	U	6.70	20.1	ug/Kg
56-23-5	Carbon Tetrachloride	0.72	U	0.72	4.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
74-97-5	Bromochloromethane	0.84	U	0.84	4.00	ug/Kg
67-66-3	Chloroform	1.00	U	1.00	4.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.61	U	0.61	4.00	ug/Kg
108-87-2	Methylcyclohexane	0.37	U	0.37	4.00	ug/Kg
71-43-2	Benzene	0.69	U	0.69	4.00	ug/Kg
107-06-2	1,2-Dichloroethane	0.73	U	0.73	4.00	ug/Kg
79-01-6	Trichloroethene	0.68	U	0.68	4.00	ug/Kg
78-87-5	1,2-Dichloropropane	0.71	U	0.71	4.00	ug/Kg
75-27-4	Bromodichloromethane	0.73	U	0.73	4.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.60	U	5.60	20.1	ug/Kg
108-88-3	Toluene	0.69	U	0.69	4.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.87	U	0.87	4.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.79	U	0.79	4.00	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1218-01RE	SDG No.:	L3823
Lab Sample ID:	L3823-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7
Sample Wt/Vol:	6.68 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066456.D	1		08/28/20 13:32	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.80	U J	0.80	4.00	ug/Kg
591-78-6	2-Hexanone	7.10	U	7.10	20.1	ug/Kg
124-48-1	Dibromochloromethane	0.86	U	0.86	4.00	ug/Kg
106-93-4	1,2-Dibromoethane	0.75	U	0.75	4.00	ug/Kg
127-18-4	Tetrachloroethene	0.70	U	0.70	4.00	ug/Kg
108-90-7	Chlorobenzene	0.72	U	0.72	4.00	ug/Kg
100-41-4	Ethyl Benzene	0.83	U	0.83	4.00	ug/Kg
179601-23-1	m/p-Xylenes	1.70	U	1.70	8.00	ug/Kg
95-47-6	o-Xylene	0.80	U	0.80	4.00	ug/Kg
100-42-5	Styrene	1.10	U	1.10	4.00	ug/Kg
75-25-2	Bromoform	0.97	U	0.97	4.00	ug/Kg
98-82-8	Isopropylbenzene	0.91	U	0.91	4.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.86	U	0.86	4.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.00	U	1.00	4.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.69	U	0.69	4.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.84	U	0.84	4.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.10	U	3.10	4.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.99	U	0.99	4.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.97	U	0.97	4.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	73.4		50 - 163	147%	SPK: 50
1868-53-7	Dibromofluoromethane	53.2		54 - 147	106%	SPK: 50
2037-26-5	Toluene-d8	49.4		49 - 140	99%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.9		25 - 144	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	62400	7.97			
540-36-3	1,4-Difluorobenzene	91100	8.86			
3114-55-4	Chlorobenzene-d5	83700	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	41000	13.57			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1218-01RE	SDG No.:	L3823
Lab Sample ID:	L3823-05RE	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7
Sample Wt/Vol:	6.68 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066456.D	1		08/28/20 13:32	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3823
Lab Sample ID:	L3823-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0.2
Sample Wt/Vol:	7.71 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066446.D	1		08/27/20 19:34	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	0.95	U	0.95	3.20	ug/Kg
74-87-3	Chloromethane	1.40	U	1.40	3.20	ug/Kg
75-01-4	Vinyl Chloride	0.90	U	0.90	3.20	ug/Kg
74-83-9	Bromomethane	0.85	U	0.85	3.20	ug/Kg
75-00-3	Chloroethane	1.10	U	1.10	3.20	ug/Kg
75-69-4	Trichlorofluoromethane	0.97	U	0.97	3.20	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.10	U	1.10	3.20	ug/Kg
75-35-4	1,1-Dichloroethene	0.92	U	0.92	3.20	ug/Kg
67-64-1	Acetone	4.00	U	4.00	16.2	ug/Kg
75-15-0	Carbon Disulfide	0.63	U	0.63	3.20	ug/Kg
1634-04-4	Methyl tert-butyl Ether	0.92	U	0.92	3.20	ug/Kg
79-20-9	Methyl Acetate	1.10	U	1.10	3.20	ug/Kg
75-09-2	Methylene Chloride	3.70	U	3.70	6.50	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.00	U	1.00	3.20	ug/Kg
75-34-3	1,1-Dichloroethane	0.61	U	0.61	3.20	ug/Kg
110-82-7	Cyclohexane	1.10	U	1.10	3.20	ug/Kg
78-93-3	2-Butanone	5.40	U	5.40	16.2	ug/Kg
56-23-5	Carbon Tetrachloride	0.58	U	0.58	3.20	ug/Kg
156-59-2	cis-1,2-Dichloroethene	0.91	U	0.91	3.20	ug/Kg
74-97-5	Bromochloromethane	0.68	U	0.68	3.20	ug/Kg
67-66-3	Chloroform	0.83	U	0.83	3.20	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.49	U	0.49	3.20	ug/Kg
108-87-2	Methylcyclohexane	0.30	U	0.30	3.20	ug/Kg
71-43-2	Benzene	0.55	U	0.55	3.20	ug/Kg
107-06-2	1,2-Dichloroethane	0.59	U	0.59	3.20	ug/Kg
79-01-6	Trichloroethene	0.55	U	0.55	3.20	ug/Kg
78-87-5	1,2-Dichloropropane	0.57	U	0.57	3.20	ug/Kg
75-27-4	Bromodichloromethane	0.59	U	0.59	3.20	ug/Kg
108-10-1	4-Methyl-2-Pentanone	4.50	U	4.50	16.2	ug/Kg
108-88-3	Toluene	0.56	U	0.56	3.20	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.70	U	0.70	3.20	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.64	U	0.64	3.20	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3823
Lab Sample ID:	L3823-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0.2
Sample Wt/Vol:	7.71 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066446.D	1		08/27/20 19:34	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.65	U	0.65	3.20	ug/Kg
591-78-6	2-Hexanone	5.70	U	5.70	16.2	ug/Kg
124-48-1	Dibromochloromethane	0.69	U	0.69	3.20	ug/Kg
106-93-4	1,2-Dibromoethane	0.60	U	0.60	3.20	ug/Kg
127-18-4	Tetrachloroethene	0.57	U	0.57	3.20	ug/Kg
108-90-7	Chlorobenzene	0.58	U	0.58	3.20	ug/Kg
100-41-4	Ethyl Benzene	0.67	U	0.67	3.20	ug/Kg
179601-23-1	m/p-Xylenes	1.40	U	1.40	6.50	ug/Kg
95-47-6	o-Xylene	0.65	U	0.65	3.20	ug/Kg
100-42-5	Styrene	0.90	U	0.90	3.20	ug/Kg
75-25-2	Bromoform	0.78	U	0.78	3.20	ug/Kg
98-82-8	Isopropylbenzene	0.74	U	0.74	3.20	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.69	U	0.69	3.20	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.84	U	0.84	3.20	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.55	U	0.55	3.20	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.68	U	0.68	3.20	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.50	U	2.50	3.20	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.80	U	0.80	3.20	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.78	U	0.78	3.20	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.0		50 - 163	112%	SPK: 50
1868-53-7	Dibromofluoromethane	50.4		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	51.6		49 - 140	103%	SPK: 50
460-00-4	4-Bromofluorobenzene	51.0		25 - 144	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	179000	7.97			
540-36-3	1,4-Difluorobenzene	251000	8.86			
3114-55-4	Chlorobenzene-d5	236000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	125000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3823
Lab Sample ID:	L3823-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	0.2
Sample Wt/Vol:	7.71 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066446.D	1		08/27/20 19:34	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3823
Lab Sample ID:	L3823-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	1
Sample Wt/Vol:	6.91 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066447.D	1		08/27/20 20:02	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.10	U	1.10	3.70	ug/Kg
74-87-3	Chloromethane	1.60	U	1.60	3.70	ug/Kg
75-01-4	Vinyl Chloride	1.00	U	1.00	3.70	ug/Kg
74-83-9	Bromomethane	0.95	U	0.95	3.70	ug/Kg
75-00-3	Chloroethane	1.20	U	1.20	3.70	ug/Kg
75-69-4	Trichlorofluoromethane	1.10	U	1.10	3.70	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.20	U	1.20	3.70	ug/Kg
75-35-4	1,1-Dichloroethene	1.00	U	1.00	3.70	ug/Kg
67-64-1	Acetone	4.40	U	4.40	18.3	ug/Kg
75-15-0	Carbon Disulfide	0.71	U	0.71	3.70	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.00	U	1.00	3.70	ug/Kg
79-20-9	Methyl Acetate	1.20	U	1.20	3.70	ug/Kg
75-09-2	Methylene Chloride	4.20	U	4.20	7.30	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.20	U	1.20	3.70	ug/Kg
75-34-3	1,1-Dichloroethane	0.69	U	0.69	3.70	ug/Kg
110-82-7	Cyclohexane	1.20	U	1.20	3.70	ug/Kg
78-93-3	2-Butanone	6.10	U	6.10	18.3	ug/Kg
56-23-5	Carbon Tetrachloride	0.65	U	0.65	3.70	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.00	U	1.00	3.70	ug/Kg
74-97-5	Bromochloromethane	0.77	U	0.77	3.70	ug/Kg
67-66-3	Chloroform	0.93	U	0.93	3.70	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.56	U	0.56	3.70	ug/Kg
108-87-2	Methylcyclohexane	0.34	U	0.34	3.70	ug/Kg
71-43-2	Benzene	0.62	U	0.62	3.70	ug/Kg
107-06-2	1,2-Dichloroethane	0.67	U	0.67	3.70	ug/Kg
79-01-6	Trichloroethene	0.62	U	0.62	3.70	ug/Kg
78-87-5	1,2-Dichloropropane	0.65	U	0.65	3.70	ug/Kg
75-27-4	Bromodichloromethane	0.66	U	0.66	3.70	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.10	U	5.10	18.3	ug/Kg
108-88-3	Toluene	0.63	U	0.63	3.70	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.79	U	0.79	3.70	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.72	U	0.72	3.70	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3823
Lab Sample ID:	L3823-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	1
Sample Wt/Vol:	6.91 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066447.D	1		08/27/20 20:02	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.73	U	0.73	3.70	ug/Kg
591-78-6	2-Hexanone	6.40	U	6.40	18.3	ug/Kg
124-48-1	Dibromochloromethane	0.78	U	0.78	3.70	ug/Kg
106-93-4	1,2-Dibromoethane	0.68	U	0.68	3.70	ug/Kg
127-18-4	Tetrachloroethene	0.64	U	0.64	3.70	ug/Kg
108-90-7	Chlorobenzene	0.65	U	0.65	3.70	ug/Kg
100-41-4	Ethyl Benzene	0.76	U	0.76	3.70	ug/Kg
179601-23-1	m/p-Xylenes	1.60	U	1.60	7.30	ug/Kg
95-47-6	o-Xylene	0.73	U	0.73	3.70	ug/Kg
100-42-5	Styrene	1.00	U	1.00	3.70	ug/Kg
75-25-2	Bromoform	0.88	U	0.88	3.70	ug/Kg
98-82-8	Isopropylbenzene	0.83	U	0.83	3.70	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.78	U	0.78	3.70	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.94	U	0.94	3.70	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.62	U	0.62	3.70	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.76	U	0.76	3.70	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.80	U	2.80	3.70	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.90	U	0.90	3.70	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.88	U	0.88	3.70	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	55.3		50 - 163	111%	SPK: 50
1868-53-7	Dibromofluoromethane	51.3		54 - 147	103%	SPK: 50
2037-26-5	Toluene-d8	51.7		49 - 140	103%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.0		25 - 144	98%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	186000	7.97			
540-36-3	1,4-Difluorobenzene	252000	8.86			
3114-55-4	Chlorobenzene-d5	235000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	115000	13.58			
TENTATIVE IDENTIFIED COMPOUNDS						
002916-68-9	Ethanol, 2-(trimethylsilyl)-	4.00	J		7.19	ug/Kg

Unknown

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3823
Lab Sample ID:	L3823-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	1
Sample Wt/Vol:	6.91 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066447.D	1		08/27/20 20:02	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3823
Lab Sample ID:	L3823-08	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	15.7
Sample Wt/Vol:	4.94 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066448.D	1		08/27/20 20:30	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.80	U	1.80	6.00	ug/Kg
74-87-3	Chloromethane	2.70	U	2.70	6.00	ug/Kg
75-01-4	Vinyl Chloride	1.70	U	1.70	6.00	ug/Kg
74-83-9	Bromomethane	1.60	U	1.60	6.00	ug/Kg
75-00-3	Chloroethane	2.00	U	2.00	6.00	ug/Kg
75-69-4	Trichlorofluoromethane	1.80	U	1.80	6.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	2.00	U	2.00	6.00	ug/Kg
75-35-4	1,1-Dichloroethene	1.70	U	1.70	6.00	ug/Kg
67-64-1	Acetone	7.30	U	7.30	30.0	ug/Kg
75-15-0	Carbon Disulfide	1.20	U	1.20	6.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.70	U	1.70	6.00	ug/Kg
79-20-9	Methyl Acetate	2.00	U	2.00	6.00	ug/Kg
75-09-2	Methylene Chloride	6.90	U	6.90	12.0	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.90	U	1.90	6.00	ug/Kg
75-34-3	1,1-Dichloroethane	1.10	U	1.10	6.00	ug/Kg
110-82-7	Cyclohexane	2.00	U	2.00	6.00	ug/Kg
78-93-3	2-Butanone	10.0	U	10.0	30.0	ug/Kg
56-23-5	Carbon Tetrachloride	1.10	U	1.10	6.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.70	U	1.70	6.00	ug/Kg
74-97-5	Bromochloromethane	1.30	U	1.30	6.00	ug/Kg
67-66-3	Chloroform	1.50	U	1.50	6.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.91	U	0.91	6.00	ug/Kg
108-87-2	Methylcyclohexane	0.55	U	0.55	6.00	ug/Kg
71-43-2	Benzene	1.00	U	1.00	6.00	ug/Kg
107-06-2	1,2-Dichloroethane	1.10	U	1.10	6.00	ug/Kg
79-01-6	Trichloroethene	1.00	U	1.00	6.00	ug/Kg
78-87-5	1,2-Dichloropropane	1.10	U	1.10	6.00	ug/Kg
75-27-4	Bromodichloromethane	1.10	U	1.10	6.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	8.40	U	8.40	30.0	ug/Kg
108-88-3	Toluene	1.00	U	1.00	6.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	1.30	U	1.30	6.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	1.20	U	1.20	6.00	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3823
Lab Sample ID:	L3823-08	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	15.7
Sample Wt/Vol:	4.94 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066448.D	1		08/27/20 20:30	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.20	U	1.20	6.00	ug/Kg
591-78-6	2-Hexanone	10.6	U	10.6	30.0	ug/Kg
124-48-1	Dibromochloromethane	1.30	U	1.30	6.00	ug/Kg
106-93-4	1,2-Dibromoethane	1.10	U	1.10	6.00	ug/Kg
127-18-4	Tetrachloroethene	1.00	U	1.00	6.00	ug/Kg
108-90-7	Chlorobenzene	1.10	U	1.10	6.00	ug/Kg
100-41-4	Ethyl Benzene	1.20	U	1.20	6.00	ug/Kg
179601-23-1	m/p-Xylenes	2.60	U	2.60	12.0	ug/Kg
95-47-6	o-Xylene	1.20	U	1.20	6.00	ug/Kg
100-42-5	Styrene	1.70	U	1.70	6.00	ug/Kg
75-25-2	Bromoform	1.40	U	1.40	6.00	ug/Kg
98-82-8	Isopropylbenzene	1.40	U	1.40	6.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	1.30	U	1.30	6.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.50	U	1.50	6.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	1.00	U	1.00	6.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	1.20	U	1.20	6.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	4.70	U	4.70	6.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.50	U	1.50	6.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.40	U	1.40	6.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	58.2		50 - 163	116%	SPK: 50
1868-53-7	Dibromofluoromethane	49.5		54 - 147	99%	SPK: 50
2037-26-5	Toluene-d8	51.1		49 - 140	102%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.1		25 - 144	100%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	179000	7.97			
540-36-3	1,4-Difluorobenzene	256000	8.86			
3114-55-4	Chlorobenzene-d5	236000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	124000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3823
Lab Sample ID:	L3823-08	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	15.7
Sample Wt/Vol:	4.94 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066448.D	1		08/27/20 20:30	VD082720

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3823
Lab Sample ID:	L3823-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.8
Sample Wt/Vol:	7.2 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066457.D	1		08/28/20 14:00	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.10	U	1.10	3.60	ug/Kg
74-87-3	Chloromethane	1.60	U	1.60	3.60	ug/Kg
75-01-4	Vinyl Chloride	1.00	U	1.00	3.60	ug/Kg
74-83-9	Bromomethane	0.95	U	0.95	3.60	ug/Kg
75-00-3	Chloroethane	1.20	U	1.20	3.60	ug/Kg
75-69-4	Trichlorofluoromethane	1.10	U	1.10	3.60	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.20	U	1.20	3.60	ug/Kg
75-35-4	1,1-Dichloroethene	1.00	U	1.00	3.60	ug/Kg
67-64-1	Acetone	4.40	U	4.40	18.2	ug/Kg
75-15-0	Carbon Disulfide	0.71	U	0.71	3.60	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.00	U	1.00	3.60	ug/Kg
79-20-9	Methyl Acetate	1.20	U	1.20	3.60	ug/Kg
75-09-2	Methylene Chloride	4.20	U	4.20	7.30	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.20	U	1.20	3.60	ug/Kg
75-34-3	1,1-Dichloroethane	0.69	U	0.69	3.60	ug/Kg
110-82-7	Cyclohexane	1.20	U	1.20	3.60	ug/Kg
78-93-3	2-Butanone	6.10	U	6.10	18.2	ug/Kg
56-23-5	Carbon Tetrachloride	0.65	U	0.65	3.60	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.00	U	1.00	3.60	ug/Kg
74-97-5	Bromochloromethane	0.76	U	0.76	3.60	ug/Kg
67-66-3	Chloroform	0.93	U	0.93	3.60	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.56	U	0.56	3.60	ug/Kg
108-87-2	Methylcyclohexane	0.34	U	0.34	3.60	ug/Kg
71-43-2	Benzene	0.62	U	0.62	3.60	ug/Kg
107-06-2	1,2-Dichloroethane	0.66	U J	0.66	3.60	ug/Kg
79-01-6	Trichloroethene	0.62	U	0.62	3.60	ug/Kg
78-87-5	1,2-Dichloropropane	0.64	U	0.64	3.60	ug/Kg
75-27-4	Bromodichloromethane	0.66	U	0.66	3.60	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.10	U	5.10	18.2	ug/Kg
108-88-3	Toluene	0.63	U	0.63	3.60	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.78	U	0.78	3.60	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.71	U	0.71	3.60	ug/Kg

9/11/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3823
Lab Sample ID:	L3823-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.8
Sample Wt/Vol:	7.2 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066457.D	1		08/28/20 14:00	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.72	U	0.72	3.60	ug/Kg
591-78-6	2-Hexanone	6.40	U	6.40	18.2	ug/Kg
124-48-1	Dibromochloromethane	0.77	U	0.77	3.60	ug/Kg
106-93-4	1,2-Dibromoethane	0.68	U	0.68	3.60	ug/Kg
127-18-4	Tetrachloroethene	0.64	U	0.64	3.60	ug/Kg
108-90-7	Chlorobenzene	0.65	U	0.65	3.60	ug/Kg
100-41-4	Ethyl Benzene	0.75	U	0.75	3.60	ug/Kg
179601-23-1	m/p-Xylenes	1.60	U	1.60	7.30	ug/Kg
95-47-6	o-Xylene	0.73	U	0.73	3.60	ug/Kg
100-42-5	Styrene	1.00	U	1.00	3.60	ug/Kg
75-25-2	Bromoform	0.88	U	0.88	3.60	ug/Kg
98-82-8	Isopropylbenzene	0.83	U	0.83	3.60	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.78	U	0.78	3.60	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.94	U	0.94	3.60	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.62	U	0.62	3.60	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.76	U	0.76	3.60	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.80	U	2.80	3.60	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.90	U	0.90	3.60	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.88	U	0.88	3.60	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.2		50 - 163	112%	SPK: 50
1868-53-7	Dibromofluoromethane	48.7		54 - 147	97%	SPK: 50
2037-26-5	Toluene-d8	48.9		49 - 140	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.8		25 - 144	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	187000	7.97			
540-36-3	1,4-Difluorobenzene	269000	8.86			
3114-55-4	Chlorobenzene-d5	239000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	120000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3823
Lab Sample ID:	L3823-09	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.8
Sample Wt/Vol:	7.2 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066457.D	1		08/28/20 14:00	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3823
Lab Sample ID:	L3823-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	7.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066462.D	1		08/28/20 16:18	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.10	U	1.10	3.80	ug/Kg
74-87-3	Chloromethane	1.70	U	1.70	3.80	ug/Kg
75-01-4	Vinyl Chloride	1.00	U	1.00	3.80	ug/Kg
74-83-9	Bromomethane	0.98	U	0.98	3.80	ug/Kg
75-00-3	Chloroethane	1.20	U	1.20	3.80	ug/Kg
75-69-4	Trichlorofluoromethane	1.10	U	1.10	3.80	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.20	U	1.20	3.80	ug/Kg
75-35-4	1,1-Dichloroethene	1.10	U	1.10	3.80	ug/Kg
67-64-1	Acetone	4.60	U	4.60	18.9	ug/Kg
75-15-0	Carbon Disulfide	0.74	U	0.74	3.80	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.10	U	1.10	3.80	ug/Kg
79-20-9	Methyl Acetate	1.20	U	1.20	3.80	ug/Kg
75-09-2	Methylene Chloride	4.30	U	4.30	7.50	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.20	U	1.20	3.80	ug/Kg
75-34-3	1,1-Dichloroethane	0.71	U	0.71	3.80	ug/Kg
110-82-7	Cyclohexane	1.30	U	1.30	3.80	ug/Kg
78-93-3	2-Butanone	6.30	U	6.30	18.9	ug/Kg
56-23-5	Carbon Tetrachloride	0.67	U	0.67	3.80	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	3.80	ug/Kg
74-97-5	Bromochloromethane	0.79	U	0.79	3.80	ug/Kg
67-66-3	Chloroform	0.96	U	0.96	3.80	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.57	U	0.57	3.80	ug/Kg
108-87-2	Methylcyclohexane	0.35	U	0.35	3.80	ug/Kg
71-43-2	Benzene	0.64	U	0.64	3.80	ug/Kg
107-06-2	1,2-Dichloroethane	0.69	U J	0.69	3.80	ug/Kg
79-01-6	Trichloroethene	0.64	U	0.64	3.80	ug/Kg
78-87-5	1,2-Dichloropropane	0.67	U	0.67	3.80	ug/Kg
75-27-4	Bromodichloromethane	0.68	U	0.68	3.80	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.30	U	5.30	18.9	ug/Kg
108-88-3	Toluene	0.65	U	0.65	3.80	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.81	U	0.81	3.80	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.74	U	0.74	3.80	ug/Kg

9/11/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3823
Lab Sample ID:	L3823-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	7.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066462.D	1		08/28/20 16:18	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.75	U	0.75	3.80	ug/Kg
591-78-6	2-Hexanone	6.70	U	6.70	18.9	ug/Kg
124-48-1	Dibromochloromethane	0.80	U	0.80	3.80	ug/Kg
106-93-4	1,2-Dibromoethane	0.70	U	0.70	3.80	ug/Kg
127-18-4	Tetrachloroethene	0.66	U	0.66	3.80	ug/Kg
108-90-7	Chlorobenzene	0.68	U	0.68	3.80	ug/Kg
100-41-4	Ethyl Benzene	0.78	U	0.78	3.80	ug/Kg
179601-23-1	m/p-Xylenes	1.60	U	1.60	7.50	ug/Kg
95-47-6	o-Xylene	0.75	U	0.75	3.80	ug/Kg
100-42-5	Styrene	1.00	U	1.00	3.80	ug/Kg
75-25-2	Bromoform	0.91	U	0.91	3.80	ug/Kg
98-82-8	Isopropylbenzene	0.86	U	0.86	3.80	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.80	U	0.80	3.80	ug/Kg
541-73-1	1,3-Dichlorobenzene	0.97	U	0.97	3.80	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.64	U	0.64	3.80	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.78	U	0.78	3.80	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	2.90	U	2.90	3.80	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.93	U	0.93	3.80	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.91	U	0.91	3.80	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	60.8		50 - 163	122%	SPK: 50
1868-53-7	Dibromofluoromethane	51.4		54 - 147	103%	SPK: 50
2037-26-5	Toluene-d8	51.9		49 - 140	104%	SPK: 50
460-00-4	4-Bromofluorobenzene	49.4		25 - 144	99%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	155000	7.97			
540-36-3	1,4-Difluorobenzene	217000	8.86			
3114-55-4	Chlorobenzene-d5	203000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	101000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3823
Lab Sample ID:	L3823-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	7.09 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066462.D	1		08/28/20 16:18	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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LAB CHRONICLE

OrderID:	L3823	**OrderDate:**	8/27/2020 12:36:10 PM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L51,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3823-01	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	
L3823-04	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/27/20	
L3823-05	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/27/20	
L3823-05RE	**789UMR-TP05-1218-01RE**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3823-06	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/27/20	
L3823-07	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/27/20	
L3823-08	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/27/20	
L3823-09	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3823-10	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	

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Cover Page

Order ID : L3827

Project ID : RFP 631

Client : Weston Solutions, Inc.

Lab Sample Number	Client Sample Number
L3827-01	789UMR-DSP01-01
L3827-02	L3827-01MS
L3827-03	L3827-01MSD
L3827-04	789UMR-DSP01-02
L3827-05	789UMR-TP07-1218-01
L3827-06	789UMR-TP08-1824-01
L3827-07	789UMR-TP11-0006-01
L3827-08	L3827-07MS
L3827-09	L3827-07MSD
L3827-10	789UMR-TP11-0006-02
L3827-11	789UMR-TP11-0612-01
L3827-12	789UMR-TP11-2430-01

I certify that the 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. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : - N. N. Pandya

APPROVED Date: 9/8/2020
By Nimisha Pandya, QA/QC Supervisor at 2:06 pm, Sep 08, 2020

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3827
Test Name: VOC-TCLVOA-10

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 08/27/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: TCLP VOA, TCLP ZHE Extraction and VOC-TCLVOA-10. This data package contains results for VOC-TCLVOA-10.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_D were done using GC column RTX-VMS which is 20 meters, 0.18 mm id, 1.0 um df, Restek Cat. #49914. The Trap was supplied by SUPELCO, K (VOACARB 3000) , TEKMAR LSC-2000 Concentrator.The analysis of VOC-TCLVOA-10 was based on method 8260C.

D. QA/ QC Samples:

The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.

The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.

The Blank Spike met requirements for all samples.
The Blank analysis did not indicate the presence of lab contamination.

The % RSD is greater than 15% in the Initial Calibration method (80D082120S.M) for Methylene Chloride these compounds are passing on Linear Regression.

The Continuous Calibration File ID VD066451.D met the requirements except for 1,2-Dichloroethane and 1,2-Dichloroethane-d4. The associate samples have no positive hit for these compounds; therefore no corrective action was required.

The Tuning criteria met requirements.

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E. Calculation: VOA Soil/Sediment Calculation

Concentration in ug/Kg dry Weight basis) $\frac{(A_x)(I_s)(D_f)}{(Ais)\ (RRF)(Ws)(D)}$ ____

Where,
Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in Nano grams (ng)
RRF = Relative response factor of the calibration standard.
Df = Dilution factor
Ws= Weight of sample

$D = \frac{100 - \%moisture}{100}$

F. Additional Comments:

Trip Blank was not provided with this set of samples.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:07 pm, Sep 08, 2020

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DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

QA Control # A3040960

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: L3827

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: APARNA SONI **Date:** 09/08/2020

2nd Level QA Review Signature: N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:07 pm, Sep 08, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3827
Lab Sample ID:	L3827-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.7
Sample Wt/Vol:	5.28 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066460.D	1		08/28/20 15:22	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.50	U	1.50	5.10	ug/Kg
74-87-3	Chloromethane	2.30	U	2.30	5.10	ug/Kg
75-01-4	Vinyl Chloride	1.40	U	1.40	5.10	ug/Kg
74-83-9	Bromomethane	1.30	U	1.30	5.10	ug/Kg
75-00-3	Chloroethane	1.70	U	1.70	5.10	ug/Kg
75-69-4	Trichlorofluoromethane	1.50	U	1.50	5.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.70	U	1.70	5.10	ug/Kg
75-35-4	1,1-Dichloroethene	1.50	U	1.50	5.10	ug/Kg
67-64-1	Acetone	6.20	U	6.20	25.6	ug/Kg
75-15-0	Carbon Disulfide	1.00	U	1.00	5.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.50	U	1.50	5.10	ug/Kg
79-20-9	Methyl Acetate	1.70	U	1.70	5.10	ug/Kg
75-09-2	Methylene Chloride	5.90	U	5.90	10.3	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.60	U	1.60	5.10	ug/Kg
75-34-3	1,1-Dichloroethane	0.97	U	0.97	5.10	ug/Kg
110-82-7	Cyclohexane	1.80	U	1.80	5.10	ug/Kg
78-93-3	2-Butanone	8.50	U	8.50	25.6	ug/Kg
56-23-5	Carbon Tetrachloride	0.91	U	0.91	5.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.40	U	1.40	5.10	ug/Kg
74-97-5	Bromochloromethane	1.10	U	1.10	5.10	ug/Kg
67-66-3	Chloroform	1.30	U	1.30	5.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.78	U	0.78	5.10	ug/Kg
108-87-2	Methylcyclohexane	0.47	U	0.47	5.10	ug/Kg
71-43-2	Benzene	0.88	U	0.88	5.10	ug/Kg
107-06-2	1,2-Dichloroethane	0.93	U J	0.93	5.10	ug/Kg
79-01-6	Trichloroethene	0.87	U	0.87	5.10	ug/Kg
78-87-5	1,2-Dichloropropane	0.91	U	0.91	5.10	ug/Kg
75-27-4	Bromodichloromethane	0.92	U	0.92	5.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	7.20	U	7.20	25.6	ug/Kg
108-88-3	Toluene	0.88	U	0.88	5.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	1.10	U	1.10	5.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	1.00	U	1.00	5.10	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3827
Lab Sample ID:	L3827-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.7
Sample Wt/Vol:	5.28 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066460.D	1		08/28/20 15:22	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	1.00	U	1.00	5.10	ug/Kg
591-78-6	2-Hexanone	9.10	U	9.10	25.6	ug/Kg
124-48-1	Dibromochloromethane	1.10	U	1.10	5.10	ug/Kg
106-93-4	1,2-Dibromoethane	0.95	U	0.95	5.10	ug/Kg
127-18-4	Tetrachloroethene	0.90	U	0.90	5.10	ug/Kg
108-90-7	Chlorobenzene	0.92	U	0.92	5.10	ug/Kg
100-41-4	Ethyl Benzene	1.10	U	1.10	5.10	ug/Kg
179601-23-1	m/p-Xylenes	2.20	U	2.20	10.3	ug/Kg
95-47-6	o-Xylene	1.00	U	1.00	5.10	ug/Kg
100-42-5	Styrene	1.40	U	1.40	5.10	ug/Kg
75-25-2	Bromoform	1.20	U	1.20	5.10	ug/Kg
98-82-8	Isopropylbenzene	1.20	U	1.20	5.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	1.10	U	1.10	5.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.30	U	1.30	5.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.87	U	0.87	5.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	1.10	U	1.10	5.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	4.00	U	4.00	5.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.30	U	1.30	5.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.20	U	1.20	5.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	55.5		50 - 163	111%	SPK: 50
1868-53-7	Dibromofluoromethane	49.4		54 - 147	99%	SPK: 50
2037-26-5	Toluene-d8	50.3		49 - 140	101%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.3		25 - 144	101%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	189000	7.97			
540-36-3	1,4-Difluorobenzene	263000	8.86			
3114-55-4	Chlorobenzene-d5	240000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	128000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3827
Lab Sample ID:	L3827-05	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	7.7
Sample Wt/Vol:	5.28 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066460.D	1		08/28/20 15:22	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
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E = Value Exceeds Calibration Range
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J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3827
Lab Sample ID:	L3827-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	5.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066461.D	1		08/28/20 15:50	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.40	U	1.40	4.80	ug/Kg
74-87-3	Chloromethane	2.10	U	2.10	4.80	ug/Kg
75-01-4	Vinyl Chloride	1.30	U	1.30	4.80	ug/Kg
74-83-9	Bromomethane	1.30	U	1.30	4.80	ug/Kg
75-00-3	Chloroethane	1.60	U	1.60	4.80	ug/Kg
75-69-4	Trichlorofluoromethane	1.40	U	1.40	4.80	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.60	U	1.60	4.80	ug/Kg
75-35-4	1,1-Dichloroethene	1.40	U	1.40	4.80	ug/Kg
67-64-1	Acetone	5.90	U	5.90	24.0	ug/Kg
75-15-0	Carbon Disulfide	0.94	U	0.94	4.80	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.40	U	1.40	4.80	ug/Kg
79-20-9	Methyl Acetate	1.60	U	1.60	4.80	ug/Kg
75-09-2	Methylene Chloride	5.50	U	5.50	9.60	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.50	U	1.50	4.80	ug/Kg
75-34-3	1,1-Dichloroethane	0.91	U	0.91	4.80	ug/Kg
110-82-7	Cyclohexane	1.60	U	1.60	4.80	ug/Kg
78-93-3	2-Butanone	8.00	U	8.00	24.0	ug/Kg
56-23-5	Carbon Tetrachloride	0.86	U	0.86	4.80	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.30	U	1.30	4.80	ug/Kg
74-97-5	Bromochloromethane	1.00	U	1.00	4.80	ug/Kg
67-66-3	Chloroform	1.20	U	1.20	4.80	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.73	U	0.73	4.80	ug/Kg
108-87-2	Methylcyclohexane	0.44	U	0.44	4.80	ug/Kg
71-43-2	Benzene	0.82	U	0.82	4.80	ug/Kg
107-06-2	1,2-Dichloroethane	0.88	U J	0.88	4.80	ug/Kg
79-01-6	Trichloroethene	0.82	U	0.82	4.80	ug/Kg
78-87-5	1,2-Dichloropropane	0.85	U	0.85	4.80	ug/Kg
75-27-4	Bromodichloromethane	0.87	U	0.87	4.80	ug/Kg
108-10-1	4-Methyl-2-Pentanone	6.70	U	6.70	24.0	ug/Kg
108-88-3	Toluene	0.83	U	0.83	4.80	ug/Kg
10061-02-6	t-1,3-Dichloropropene	1.00	U	1.00	4.80	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.94	U	0.94	4.80	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3827
Lab Sample ID:	L3827-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	5.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066461.D	1		08/28/20 15:50	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.96	U	0.96	4.80	ug/Kg
591-78-6	2-Hexanone	8.50	U	8.50	24.0	ug/Kg
124-48-1	Dibromochloromethane	1.00	U	1.00	4.80	ug/Kg
106-93-4	1,2-Dibromoethane	0.89	U	0.89	4.80	ug/Kg
127-18-4	Tetrachloroethene	0.84	U	0.84	4.80	ug/Kg
108-90-7	Chlorobenzene	0.86	U	0.86	4.80	ug/Kg
100-41-4	Ethyl Benzene	0.99	U	0.99	4.80	ug/Kg
179601-23-1	m/p-Xylenes	2.10	U	2.10	9.60	ug/Kg
95-47-6	o-Xylene	0.96	U	0.96	4.80	ug/Kg
100-42-5	Styrene	1.30	U	1.30	4.80	ug/Kg
75-25-2	Bromoform	1.20	U	1.20	4.80	ug/Kg
98-82-8	Isopropylbenzene	1.10	U	1.10	4.80	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	1.00	U	1.00	4.80	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.20	U	1.20	4.80	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.82	U	0.82	4.80	ug/Kg
95-50-1	1,2-Dichlorobenzene	1.00	U	1.00	4.80	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.70	U	3.70	4.80	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.20	U	1.20	4.80	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.20	U	1.20	4.80	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.3		50 - 163	115%	SPK: 50
1868-53-7	Dibromofluoromethane	50.3		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	50.4		49 - 140	101%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.1		25 - 144	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	172000	7.97			
540-36-3	1,4-Difluorobenzene	238000	8.86			
3114-55-4	Chlorobenzene-d5	216000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	107000	13.57			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3827
Lab Sample ID:	L3827-06	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.5
Sample Wt/Vol:	5.56 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066461.D	1		08/28/20 15:50	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3827
Lab Sample ID:	L3827-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.3
Sample Wt/Vol:	6.61 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066458.D	1		08/28/20 14:27	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.20	U	1.20	4.10	ug/Kg
74-87-3	Chloromethane	1.80	U	1.80	4.10	ug/Kg
75-01-4	Vinyl Chloride	1.10	U	1.10	4.10	ug/Kg
74-83-9	Bromomethane	1.10	U	1.10	4.10	ug/Kg
75-00-3	Chloroethane	1.40	U	1.40	4.10	ug/Kg
75-69-4	Trichlorofluoromethane	1.20	U	1.20	4.10	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.40	U	1.40	4.10	ug/Kg
75-35-4	1,1-Dichloroethene	1.20	U	1.20	4.10	ug/Kg
67-64-1	Acetone	5.00	U	5.00	20.6	ug/Kg
75-15-0	Carbon Disulfide	0.80	U	0.80	4.10	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.20	U	1.20	4.10	ug/Kg
79-20-9	Methyl Acetate	1.30	U	1.30	4.10	ug/Kg
75-09-2	Methylene Chloride	4.70	U	4.70	8.20	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.30	U	1.30	4.10	ug/Kg
75-34-3	1,1-Dichloroethane	0.78	U	0.78	4.10	ug/Kg
110-82-7	Cyclohexane	1.40	U	1.40	4.10	ug/Kg
78-93-3	2-Butanone	6.80	U	6.80	20.6	ug/Kg
56-23-5	Carbon Tetrachloride	0.73	U	0.73	4.10	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	4.10	ug/Kg
74-97-5	Bromochloromethane	0.86	U	0.86	4.10	ug/Kg
67-66-3	Chloroform	1.10	U	1.10	4.10	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.63	U	0.63	4.10	ug/Kg
108-87-2	Methylcyclohexane	0.38	U	0.38	4.10	ug/Kg
71-43-2	Benzene	0.70	U	0.70	4.10	ug/Kg
107-06-2	1,2-Dichloroethane	0.75	U J	0.75	4.10	ug/Kg
79-01-6	Trichloroethene	0.70	U	0.70	4.10	ug/Kg
78-87-5	1,2-Dichloropropane	0.73	U	0.73	4.10	ug/Kg
75-27-4	Bromodichloromethane	0.74	U	0.74	4.10	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.80	U	5.80	20.6	ug/Kg
108-88-3	Toluene	0.71	U	0.71	4.10	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.89	U	0.89	4.10	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.81	U	0.81	4.10	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3827
Lab Sample ID:	L3827-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.3
Sample Wt/Vol:	6.61 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066458.D	1		08/28/20 14:27	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.82	U	0.82	4.10	ug/Kg
591-78-6	2-Hexanone	7.30	U	7.30	20.6	ug/Kg
124-48-1	Dibromochloromethane	0.88	U	0.88	4.10	ug/Kg
106-93-4	1,2-Dibromoethane	0.77	U	0.77	4.10	ug/Kg
127-18-4	Tetrachloroethene	0.72	U	0.72	4.10	ug/Kg
108-90-7	Chlorobenzene	0.74	U	0.74	4.10	ug/Kg
100-41-4	Ethyl Benzene	0.85	U	0.85	4.10	ug/Kg
179601-23-1	m/p-Xylenes	2.80	J	1.80	8.20	ug/Kg
95-47-6	o-Xylene	1.30	J	0.82	4.10	ug/Kg
100-42-5	Styrene	1.10	U	1.10	4.10	ug/Kg
75-25-2	Bromoform	0.99	U	0.99	4.10	ug/Kg
98-82-8	Isopropylbenzene	0.94	U	0.94	4.10	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.88	U	0.88	4.10	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.10	U	1.10	4.10	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.70	U	0.70	4.10	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.86	U	0.86	4.10	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.20	U	3.20	4.10	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.00	U	1.00	4.10	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.00	U	1.00	4.10	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	57.2		50 - 163	114%	SPK: 50
1868-53-7	Dibromofluoromethane	47.9		54 - 147	96%	SPK: 50
2037-26-5	Toluene-d8	48.9		49 - 140	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	42.6		25 - 144	85%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	182000	7.97			
540-36-3	1,4-Difluorobenzene	259000	8.86			
3114-55-4	Chlorobenzene-d5	219000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	92400	13.57			
TENTATIVE IDENTIFIED COMPOUNDS						
055429-29-3	Arsenous acid, tris(trimethylsilyl	6.60	J		10.7	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3827
Lab Sample ID:	L3827-07	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	8.3
Sample Wt/Vol:	6.61 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066458.D	1		08/28/20 14:27	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3827
Lab Sample ID:	L3827-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.3
Sample Wt/Vol:	6.47 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066465.D	1		08/28/20 17:40	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.30	U	1.30	4.50	ug/Kg
74-87-3	Chloromethane	2.00	U	2.00	4.50	ug/Kg
75-01-4	Vinyl Chloride	1.20	U	1.20	4.50	ug/Kg
74-83-9	Bromomethane	1.20	U	1.20	4.50	ug/Kg
75-00-3	Chloroethane	1.50	U	1.50	4.50	ug/Kg
75-69-4	Trichlorofluoromethane	1.30	U	1.30	4.50	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.50	U	1.50	4.50	ug/Kg
75-35-4	1,1-Dichloroethene	1.30	U	1.30	4.50	ug/Kg
67-64-1	Acetone	5.40	U	5.40	22.3	ug/Kg
75-15-0	Carbon Disulfide	0.87	U	0.87	4.50	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.30	U	1.30	4.50	ug/Kg
79-20-9	Methyl Acetate	1.40	U	1.40	4.50	ug/Kg
75-09-2	Methylene Chloride	5.10	U	5.10	8.90	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.40	U	1.40	4.50	ug/Kg
75-34-3	1,1-Dichloroethane	0.84	U	0.84	4.50	ug/Kg
110-82-7	Cyclohexane	1.50	U	1.50	4.50	ug/Kg
78-93-3	2-Butanone	7.40	U	7.40	22.3	ug/Kg
56-23-5	Carbon Tetrachloride	0.79	U	0.79	4.50	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.20	U	1.20	4.50	ug/Kg
74-97-5	Bromochloromethane	0.93	U	0.93	4.50	ug/Kg
67-66-3	Chloroform	1.10	U	1.10	4.50	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.68	U	0.68	4.50	ug/Kg
108-87-2	Methylcyclohexane	0.41	U	0.41	4.50	ug/Kg
71-43-2	Benzene	0.76	U	0.76	4.50	ug/Kg
107-06-2	1,2-Dichloroethane	0.81	U J	0.81	4.50	ug/Kg
79-01-6	Trichloroethene	0.76	U	0.76	4.50	ug/Kg
78-87-5	1,2-Dichloropropane	0.79	U	0.79	4.50	ug/Kg
75-27-4	Bromodichloromethane	0.80	U	0.80	4.50	ug/Kg
108-10-1	4-Methyl-2-Pentanone	6.20	U	6.20	22.3	ug/Kg
108-88-3	Toluene	0.77	U	0.77	4.50	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.96	U	0.96	4.50	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.87	U	0.87	4.50	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3827
Lab Sample ID:	L3827-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.3
Sample Wt/Vol:	6.47 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066465.D	1		08/28/20 17:40	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.89	U	0.89	4.50	ug/Kg
591-78-6	2-Hexanone	7.90	U	7.90	22.3	ug/Kg
124-48-1	Dibromochloromethane	0.95	U	0.95	4.50	ug/Kg
106-93-4	1,2-Dibromoethane	0.83	U	0.83	4.50	ug/Kg
127-18-4	Tetrachloroethene	0.78	U	0.78	4.50	ug/Kg
108-90-7	Chlorobenzene	0.80	U	0.80	4.50	ug/Kg
100-41-4	Ethyl Benzene	0.92	U	0.92	4.50	ug/Kg
179601-23-1	m/p-Xylenes	2.70	J	1.90	8.90	ug/Kg
95-47-6	o-Xylene	1.20	J	0.89	4.50	ug/Kg
100-42-5	Styrene	1.20	U	1.20	4.50	ug/Kg
75-25-2	Bromoform	1.10	U	1.10	4.50	ug/Kg
98-82-8	Isopropylbenzene	1.00	U	1.00	4.50	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.95	U	0.95	4.50	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.20	U	1.20	4.50	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.76	U	0.76	4.50	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.93	U	0.93	4.50	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.50	U	3.50	4.50	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.10	U	1.10	4.50	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.10	U	1.10	4.50	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	56.2		50 - 163	112%	SPK: 50
1868-53-7	Dibromofluoromethane	51.4		54 - 147	103%	SPK: 50
2037-26-5	Toluene-d8	51.0		49 - 140	102%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.8		25 - 144	98%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	193000	7.98			
540-36-3	1,4-Difluorobenzene	264000	8.86			
3114-55-4	Chlorobenzene-d5	240000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	121000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3827
Lab Sample ID:	L3827-10	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	13.3
Sample Wt/Vol:	6.47 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066465.D	1		08/28/20 17:40	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3827
Lab Sample ID:	L3827-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.3
Sample Wt/Vol:	6.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066466.D	1		08/28/20 18:08	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.20	U	1.20	4.00	ug/Kg
74-87-3	Chloromethane	1.80	U	1.80	4.00	ug/Kg
75-01-4	Vinyl Chloride	1.10	U	1.10	4.00	ug/Kg
74-83-9	Bromomethane	1.00	U	1.00	4.00	ug/Kg
75-00-3	Chloroethane	1.30	U	1.30	4.00	ug/Kg
75-69-4	Trichlorofluoromethane	1.20	U	1.20	4.00	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.30	U	1.30	4.00	ug/Kg
75-35-4	1,1-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
67-64-1	Acetone	4.90	U	4.90	19.9	ug/Kg
75-15-0	Carbon Disulfide	0.78	U	0.78	4.00	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.10	U	1.10	4.00	ug/Kg
79-20-9	Methyl Acetate	1.30	U	1.30	4.00	ug/Kg
75-09-2	Methylene Chloride	4.60	U	4.60	8.00	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.30	U	1.30	4.00	ug/Kg
75-34-3	1,1-Dichloroethane	0.75	U	0.75	4.00	ug/Kg
110-82-7	Cyclohexane	1.40	U	1.40	4.00	ug/Kg
78-93-3	2-Butanone	6.60	U	6.60	19.9	ug/Kg
56-23-5	Carbon Tetrachloride	0.71	U	0.71	4.00	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.10	U	1.10	4.00	ug/Kg
74-97-5	Bromochloromethane	0.84	U	0.84	4.00	ug/Kg
67-66-3	Chloroform	1.00	U	1.00	4.00	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.61	U	0.61	4.00	ug/Kg
108-87-2	Methylcyclohexane	0.37	U	0.37	4.00	ug/Kg
71-43-2	Benzene	0.68	U	0.68	4.00	ug/Kg
107-06-2	1,2-Dichloroethane	0.73	U J	0.73	4.00	ug/Kg
79-01-6	Trichloroethene	0.68	U	0.68	4.00	ug/Kg
78-87-5	1,2-Dichloropropane	0.70	U	0.70	4.00	ug/Kg
75-27-4	Bromodichloromethane	0.72	U	0.72	4.00	ug/Kg
108-10-1	4-Methyl-2-Pentanone	5.60	U	5.60	19.9	ug/Kg
108-88-3	Toluene	0.68	U	0.68	4.00	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.86	U	0.86	4.00	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.78	U	0.78	4.00	ug/Kg

SD 9/14/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3827
Lab Sample ID:	L3827-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.3
Sample Wt/Vol:	6.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066466.D	1		08/28/20 18:08	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.79	U	0.79	4.00	ug/Kg
591-78-6	2-Hexanone	7.00	U	7.00	19.9	ug/Kg
124-48-1	Dibromochloromethane	0.85	U	0.85	4.00	ug/Kg
106-93-4	1,2-Dibromoethane	0.74	U	0.74	4.00	ug/Kg
127-18-4	Tetrachloroethene	0.70	U	0.70	4.00	ug/Kg
108-90-7	Chlorobenzene	0.71	U	0.71	4.00	ug/Kg
100-41-4	Ethyl Benzene	0.82	U	0.82	4.00	ug/Kg
179601-23-1	m/p-Xylenes	1.70	U	1.70	8.00	ug/Kg
95-47-6	o-Xylene	0.79	U	0.79	4.00	ug/Kg
100-42-5	Styrene	1.10	U	1.10	4.00	ug/Kg
75-25-2	Bromoform	0.96	U	0.96	4.00	ug/Kg
98-82-8	Isopropylbenzene	0.91	U	0.91	4.00	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.85	U	0.85	4.00	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.00	U	1.00	4.00	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.68	U	0.68	4.00	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.83	U	0.83	4.00	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.10	U	3.10	4.00	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	0.98	U	0.98	4.00	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	0.96	U	0.96	4.00	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.7		50 - 163	109%	SPK: 50
1868-53-7	Dibromofluoromethane	48.4		54 - 147	97%	SPK: 50
2037-26-5	Toluene-d8	49.8		49 - 140	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	48.2		25 - 144	96%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	189000	7.97			
540-36-3	1,4-Difluorobenzene	260000	8.86			
3114-55-4	Chlorobenzene-d5	235000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	121000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3827
Lab Sample ID:	L3827-11	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	4.3
Sample Wt/Vol:	6.55 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066466.D	1		08/28/20 18:08	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
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J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
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() = Laboratory InHouse Limit
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3827
Lab Sample ID:	L3827-12	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.1
Sample Wt/Vol:	6.16 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066467.D	1		08/28/20 18:35	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
75-71-8	Dichlorodifluoromethane	1.30	U	1.30	4.30	ug/Kg
74-87-3	Chloromethane	1.90	U	1.90	4.30	ug/Kg
75-01-4	Vinyl Chloride	1.20	U	1.20	4.30	ug/Kg
74-83-9	Bromomethane	1.10	U	1.10	4.30	ug/Kg
75-00-3	Chloroethane	1.40	U	1.40	4.30	ug/Kg
75-69-4	Trichlorofluoromethane	1.30	U	1.30	4.30	ug/Kg
76-13-1	1,1,2-Trichlorotrifluoroethane	1.40	U	1.40	4.30	ug/Kg
75-35-4	1,1-Dichloroethene	1.20	U	1.20	4.30	ug/Kg
67-64-1	Acetone	5.30	U	5.30	21.6	ug/Kg
75-15-0	Carbon Disulfide	0.84	U	0.84	4.30	ug/Kg
1634-04-4	Methyl tert-butyl Ether	1.20	U	1.20	4.30	ug/Kg
79-20-9	Methyl Acetate	1.40	U	1.40	4.30	ug/Kg
75-09-2	Methylene Chloride	4.90	U	4.90	8.60	ug/Kg
156-60-5	trans-1,2-Dichloroethene	1.40	U	1.40	4.30	ug/Kg
75-34-3	1,1-Dichloroethane	0.82	U	0.82	4.30	ug/Kg
110-82-7	Cyclohexane	1.50	U	1.50	4.30	ug/Kg
78-93-3	2-Butanone	7.20	U	7.20	21.6	ug/Kg
56-23-5	Carbon Tetrachloride	0.77	U	0.77	4.30	ug/Kg
156-59-2	cis-1,2-Dichloroethene	1.20	U	1.20	4.30	ug/Kg
74-97-5	Bromochloromethane	0.91	U	0.91	4.30	ug/Kg
67-66-3	Chloroform	1.10	U	1.10	4.30	ug/Kg
71-55-6	1,1,1-Trichloroethane	0.66	U	0.66	4.30	ug/Kg
108-87-2	Methylcyclohexane	0.40	U	0.40	4.30	ug/Kg
71-43-2	Benzene	0.74	U	0.74	4.30	ug/Kg
107-06-2	1,2-Dichloroethane	0.79	U J	0.79	4.30	ug/Kg
79-01-6	Trichloroethene	0.73	U	0.73	4.30	ug/Kg
78-87-5	1,2-Dichloropropane	0.76	U	0.76	4.30	ug/Kg
75-27-4	Bromodichloromethane	0.78	U	0.78	4.30	ug/Kg
108-10-1	4-Methyl-2-Pentanone	6.00	U	6.00	21.6	ug/Kg
108-88-3	Toluene	0.74	U	0.74	4.30	ug/Kg
10061-02-6	t-1,3-Dichloropropene	0.93	U	0.93	4.30	ug/Kg
10061-01-5	cis-1,3-Dichloropropene	0.85	U	0.85	4.30	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3827
Lab Sample ID:	L3827-12	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.1
Sample Wt/Vol:	6.16 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066467.D	1		08/28/20 18:35	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
79-00-5	1,1,2-Trichloroethane	0.86	U	0.86	4.30	ug/Kg
591-78-6	2-Hexanone	7.60	U	7.60	21.6	ug/Kg
124-48-1	Dibromochloromethane	0.92	U	0.92	4.30	ug/Kg
106-93-4	1,2-Dibromoethane	0.80	U	0.80	4.30	ug/Kg
127-18-4	Tetrachloroethene	0.75	U	0.75	4.30	ug/Kg
108-90-7	Chlorobenzene	0.77	U	0.77	4.30	ug/Kg
100-41-4	Ethyl Benzene	0.89	U	0.89	4.30	ug/Kg
179601-23-1	m/p-Xylenes	1.90	U	1.90	8.60	ug/Kg
95-47-6	o-Xylene	0.86	U	0.86	4.30	ug/Kg
100-42-5	Styrene	1.20	U	1.20	4.30	ug/Kg
75-25-2	Bromoform	1.00	U	1.00	4.30	ug/Kg
98-82-8	Isopropylbenzene	0.98	U	0.98	4.30	ug/Kg
79-34-5	1,1,2,2-Tetrachloroethane	0.92	U	0.92	4.30	ug/Kg
541-73-1	1,3-Dichlorobenzene	1.10	U	1.10	4.30	ug/Kg
106-46-7	1,4-Dichlorobenzene	0.74	U	0.74	4.30	ug/Kg
95-50-1	1,2-Dichlorobenzene	0.90	U	0.90	4.30	ug/Kg
96-12-8	1,2-Dibromo-3-Chloropropane	3.40	U	3.40	4.30	ug/Kg
120-82-1	1,2,4-Trichlorobenzene	1.10	U	1.10	4.30	ug/Kg
87-61-6	1,2,3-Trichlorobenzene	1.00	U	1.00	4.30	ug/Kg
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	54.8		50 - 163	110%	SPK: 50
1868-53-7	Dibromofluoromethane	50.4		54 - 147	101%	SPK: 50
2037-26-5	Toluene-d8	51.0		49 - 140	102%	SPK: 50
460-00-4	4-Bromofluorobenzene	50.9		25 - 144	102%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	190000	7.97			
540-36-3	1,4-Difluorobenzene	256000	8.86			
3114-55-4	Chlorobenzene-d5	239000	11.64			
3855-82-1	1,4-Dichlorobenzene-d4	122000	13.58			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3827
Lab Sample ID:	L3827-12	Matrix:	SOIL
Analytical Method:	SW8260	% Moisture:	6.1
Sample Wt/Vol:	6.16 Units: g	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	VOC-TCLVOA-10
GC Column:	RTX-VMS ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VD066467.D	1		08/28/20 18:35	VD082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
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LAB CHRONICLE

OrderID:	L3827	**OrderDate:**	8/27/2020 1:03:00 PM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	VOA Ref. #2 Soil,L51

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3827-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	
L3827-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	
L3827-05	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3827-06	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3827-07	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3827-10	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3827-11	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	
L3827-12	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/27/20**
			VOC-TCLVOA-10	8260C			08/28/20	

TCLP Volatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
START V Sample No.:	**789UMR-DSP01**	**789UMR-DSP01-02**[1]	**789UMR-DSP02-01**
Lab sample ID No.:	**L3827-01**	**L3827-04**	**L3827-05**
Dilution Factor	**1**	**1**	**1**
TCLP VOLATILES - ug/L			
Vinyl Chloride	0.17 U	0.17 U	0.17 U
1,1-Dichloroethene	0.27 U	0.27 U	0.27 U
2-Butanone	**8.3 J**	**8.6 J**	**8 J**
Carbon Tetrachloride	0.26 U	0.26 U	0.26 U
Chloroform	0.19 U	0.19 U	0.19 U
Benzene	0.13 U	0.13 U	0.13 U
1,2-Dichloroethane	0.27 U	0.27 U	0.27 U
Trichloroethene	0.13 U	0.13 U	0.13 U
Tetrachloroethene	0.13 U	0.13 U	0.13 U
Chlorobenzene	0.12 U	0.12 U	0.12 U

[1] A field duplicate of sample 789UMR-DSP01-01
TCLP: Toxicity Characteristic Leaching Procedure
U: Not Detected
J: Estimated Result
ug/L: Micrograms per liter

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3827
Test Name: TCLP VOA

A. Number of Samples and Date of Receipt:
12 Solid samples were received on 08/27/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: TCLP VOA, TCLP ZHE Extraction and VOC-TCLVOA-10. This data package contains results for TCLP VOA.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_X were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of TCLP VOA was based on method 8260C and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.
The Blank Spike met requirements for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements for %RSD.
The Continuous Calibration met the requirements.
The Tuning criteria met requirements.

E. Additional Comments:
Trip Blank was not provided with this set of samples.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

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F. TCLP VOC Calculation:

$$\text{Concentration in ug/L} = \frac{(Ax)\,(Is)\,(DF)}{(Ais)\,(RRF)\,(Vo)}$$

Where,
Ax = Area of the characteristic ion (EICP) for the compound to be measured.
Ais = Area of the characteristic ion (EICP) for the internal standard.
Is = Amount of internal standard added in ng.
RRF = Mean Relative Response Factor from the initial calibration standard.
Vo = Total volume of water purged, in mL.
DF = Dilution Factor.

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:07 pm, Sep 08, 2020

CHEMTECH

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3827
Lab Sample ID:	L3827-01	Matrix:	TCLP
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	TCLP VOA
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX018117.D	1		08/28/20 13:58	VX082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-01-4	Vinyl Chloride	0.17	U	0.17	5.00	ug/L
75-35-4	1,1-Dichloroethene	0.27	U	0.27	5.00	ug/L
78-93-3	2-Butanone	8.30	J	1.00	25.0	ug/L
56-23-5	Carbon Tetrachloride	0.26	U	0.26	5.00	ug/L
67-66-3	Chloroform	0.19	U	0.19	5.00	ug/L
71-43-2	Benzene	0.13	U	0.13	5.00	ug/L
107-06-2	1,2-Dichloroethane	0.27	U	0.27	5.00	ug/L
79-01-6	Trichloroethene	0.13	U	0.13	5.00	ug/L
127-18-4	Tetrachloroethene	0.13	U	0.13	5.00	ug/L
108-90-7	Chlorobenzene	0.12	U	0.12	5.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	49.7		61 - 141	99%	SPK: 50
1868-53-7	Dibromofluoromethane	49.1		69 - 133	98%	SPK: 50
2037-26-5	Toluene-d8	49.0		65 - 126	98%	SPK: 50
460-00-4	4-Bromofluorobenzene	45.4		58 - 135	91%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	624000	5.63			
540-36-3	1,4-Difluorobenzene	1030000	6.83			
3114-55-4	Chlorobenzene-d5	975000	10.1			
3855-82-1	1,4-Dichlorobenzene-d4	441000	12.06			

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3827
Lab Sample ID:	L3827-04	Matrix:	TCLP
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	TCLP VOA
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX018118.D	1		08/28/20 14:21	VX082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-01-4	Vinyl Chloride	0.17	U	0.17	5.00	ug/L
75-35-4	1,1-Dichloroethene	0.27	U	0.27	5.00	ug/L
78-93-3	2-Butanone	8.60	J	1.00	25.0	ug/L
56-23-5	Carbon Tetrachloride	0.26	U	0.26	5.00	ug/L
67-66-3	Chloroform	0.19	U	0.19	5.00	ug/L
71-43-2	Benzene	0.13	U	0.13	5.00	ug/L
107-06-2	1,2-Dichloroethane	0.27	U	0.27	5.00	ug/L
79-01-6	Trichloroethene	0.13	U	0.13	5.00	ug/L
127-18-4	Tetrachloroethene	0.13	U	0.13	5.00	ug/L
108-90-7	Chlorobenzene	0.12	U	0.12	5.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.0		61 - 141	100%	SPK: 50
1868-53-7	Dibromofluoromethane	48.5		69 - 133	97%	SPK: 50
2037-26-5	Toluene-d8	48.7		65 - 126	97%	SPK: 50
460-00-4	4-Bromofluorobenzene	46.3		58 - 135	93%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	603000	5.64			
540-36-3	1,4-Difluorobenzene	1010000	6.84			
3114-55-4	Chlorobenzene-d5	975000	10.1			
3855-82-1	1,4-Dichlorobenzene-d4	454000	12.06			

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH

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LAB CHRONICLE

OrderID:	L3827	**OrderDate:**	8/27/2020 1:03:00 PM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L51,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3827-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	
L3827-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	

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SHIPPING DOCUMENTS

USEPA
DateShipped: 8/26/2020
CarrierName: FedEx
AirbillNo: 7713-5827-0902

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082520-0036-0019-01
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP01-01	TCLP VOCs	Soil/Rock/Slag	8/25/2020	17:05	5	25g Encore	4 C	Y	SW826 8260C
	789UMR-DSP01-02	TCLP VOCs	Soil/Rock/Slag	8/25/2020	17:10	3	25g Encore	4 C	N	SW826 8260C
	789UMR-TP07-1218-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	14:40	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP07-1218-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	14:40	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP08-1824-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	12:15	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP08-1824-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	12:15	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-0006-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:05	1	4 oz glass jar	4 C	Y	SW846 8260C
	789UMR-TP11-0006-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:05	6	5g Encore	4 C	Y	SW846 8260C
	789UMR-TP11-0006-02	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:07	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-0006-02	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:07	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-0612-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:07	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-0612-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:07	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP11-2430-01	Percent Moisture	Soil/Rock/Slag	8/25/2020	16:25	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP11-2430-01	TAL VOCs	Soil/Rock/Slag	8/25/2020	16:25	3	5g Encore	4 C	N	SW846 8260C

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
35/Analyses	Weston START V	8/25/20		8-27-2020 1010	2.2°C NO TAGS IR GUN #1
					custody seals intact
					Temp blk. present

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Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	EP-W-14-030
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255420
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-18-00132
Texas	T104704488-20-13

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3823
Test Name: TCLP VOA

A. Number of Samples and Date of Receipt:
10 Solid samples were received on 08/27/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: TCLP VOA, TCLP ZHE Extraction and VOC-TCLVOA-10. This data package contains results for TCLP VOA.

C. Analytical Techniques:
The analysis performed on instrument MSVOA_X were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of TCLP VOA was based on method 8260C and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .
The Tuning criteria met requirements.

E. Water Calculation :

$$\text{Concentration in ug/L} = \frac{(A_x)(I_s)(Df)}{(A_{is})(RRF)(V_0)}$$

Where
Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in nanograms (ng)
RRF = Relative response factor of the initial calibration curve standard.

Vo = Volume of water purged in milliliters (mL)
Df = Dilution factor.

F. Additional Comments:
Trip Blank was not provided with this set of samples.

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature___ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 2:01 pm, Sep 08, 2020

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SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/27/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3823
Lab Sample ID:	L3823-01	Matrix:	TCLP
Analytical Method:	SW8260	% Moisture:	100
Sample Wt/Vol:	5 Units: mL	Final Vol:	5000 uL
Soil Aliquot Vol:	uL	Test:	TCLP VOA
GC Column:	DB-624UI ID : 0.18	Level :	LOW

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
VX018116.D	1		08/28/20 13:35	VX082820

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
75-01-4	Vinyl Chloride	0.17	U	0.17	5.00	ug/L
75-35-4	1,1-Dichloroethene	0.27	U	0.27	5.00	ug/L
78-93-3	2-Butanone	8.00	J	1.00	25.0	ug/L
56-23-5	Carbon Tetrachloride	0.26	U	0.26	5.00	ug/L
67-66-3	Chloroform	0.19	U	0.19	5.00	ug/L
71-43-2	Benzene	0.13	U	0.13	5.00	ug/L
107-06-2	1,2-Dichloroethane	0.27	U	0.27	5.00	ug/L
79-01-6	Trichloroethene	0.13	U	0.13	5.00	ug/L
127-18-4	Tetrachloroethene	0.13	U	0.13	5.00	ug/L
108-90-7	Chlorobenzene	0.12	U	0.12	5.00	ug/L
SURROGATES						
17060-07-0	1,2-Dichloroethane-d4	50.8		61 - 141	102%	SPK: 50
1868-53-7	Dibromofluoromethane	49.6		69 - 133	99%	SPK: 50
2037-26-5	Toluene-d8	50.0		65 - 126	100%	SPK: 50
460-00-4	4-Bromofluorobenzene	47.0		58 - 135	94%	SPK: 50
INTERNAL STANDARDS						
363-72-4	Pentafluorobenzene	624000	5.64			
540-36-3	1,4-Difluorobenzene	1040000	6.84			
3114-55-4	Chlorobenzene-d5	1010000	10.1			
3855-82-1	1,4-Dichlorobenzene-d4	462000	12.06			

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

CHEMTECH

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Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	L3823	**OrderDate:**	8/27/2020 12:36:10 PM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L51,VOA Ref. #2 Soil

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3823-01	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/27/20**
			TCLP VOA	8260C			08/28/20	

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SHIPPING DOCUMENTS

L3823

USEPA
DateShipped: 8/26/2020
CarrierName: FedEx
AirbillNo: 7713-6910-1550

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082620-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP02-01	TCLP VOCs	Soil/Rock/Slag	8/26/2020	15:25	3	25g Encore	4 C	Y	SW826 8260C
	789UMR-TP05-0612-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	09:30	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-0612-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	09:30	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-1218-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	12:36	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-1218-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	12:36	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-1824-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	13:05	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-1824-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	13:05	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP05-3036-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	13:18	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP05-3036-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	13:18	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP06-0006-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	09:30	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP06-0006-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	09:30	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP12-0002-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	08:45	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP12-0002-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	08:45	1	4 oz glass jar	4 C	N	SW846 8260C
	789UMR-TP13-0612-01	TAL VOCs	Soil/Rock/Slag	8/26/2020	14:55	3	5g Encore	4 C	N	SW846 8260C
	789UMR-TP13-0612-01	Percent Moisture	Soil/Rock/Slag	8/26/2020	14:55	1	4 oz glass jar	4 C	N	SW846 8260C

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
31/Analyses	Weston STAR TV	08/26/20		8/27/2020 1010	2-7°C NO TAGS Temp BLK. PRESENT custody seals INTACT IR GUN #1

CHEMTECH 284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	EP-W-14-030
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255420
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-18-00132
Texas	T104704488-20-13

REGION II START V DATA ASSESSMENT REPORT

SITE: 789 Upper Mountain Road Site

Lab Order No.: L3837 **No. of Samples/Matrix:** 16 - Soil/Rock/Slag

LAB: Chemtech Consulting Group, Mountainside, New Jersey

ANALYSIS: Target Analyte List (TAL) Semi-volatile Organic Compounds (SVOCs), TAL Pesticides (PESTs), TAL Polychlorinated Biphenyls (PCBs), Herbicides, and TAL Metals, Mercury, & Cyanide; and Resource Conservation and Recovery Act (RCRA) Characteristics; and Toxicity Characteristic Leaching Procedure (TCLP) SVOCs, TCLP Pesticides, TCLP Herbicides, and TCLP Metals plus Mercury.

CONTRACTOR: Weston Solutions, Inc., Superfund Technical Assessment & Response Team V (START V)

The following table summarizes the analytical methods used for the requested analyses and the U.S. Environmental Protection Agency, Region II (EPA) data validation standard operating procedures (SOPs) used for data validation.

Analysis	Analytical Method	Data Validation SOP No.
TAL SVOCs & TCLP SVOCs	SW-846 Method 8270D	HW-22 (Revision 5), December 2010
TAL Pesticides & TCLP Pesticides	SW-846 Method 8081B	HW-44 (Revision 1.1), December 2010
TAL PCBs	SW-846 Method 8082A	HW-45 (Revision 1.1), December 2010
Herbicides & TCLP Herbicides	SW-846 Method 8151A	HW-17 (Revision 3.1), December 2010
TAL Metals plus Mercury and Cyanide, and TCLP Metals plus Mercury	SW-846 Method 6010D/7470A/9012B	SOP No. HW-3a/3c (Revision 1), December 2016 & Analytical Methods.

All data were found to be valid and acceptable except those analytes which have been rejected, "R" (unusable). Due to various quality control (QC) problems some analytes may have been qualified with a "J" (estimated), "N" (presumptive evidence for the presence of the material), "U" (non-detect), or "JN" (presumptive evidence for the presence of the material at an estimated value) flag. All action is detailed on the attached sheets.

The "R" flag means that the associated value is unusable. In other words, significant data bias is evident and the reported analyte concentration is unreliable.

Reviewer Signature: Smita Sumbaly **Date:** 10/12/2020

Verified By: _____ **Date:** 10/12/2020

From August 25 through 27, 2020, EPA and START V sampling personnel collected 13 soil/Rock/Slag samples, including one field duplicate, for TAL SVOC, TAL pesticides, TAL PCBs, herbicides, and TAL metals including mercury, and cyanide, analyses; and three soil/rock/slag samples, including one field duplicate for RCRA Characteristics, TCLP SVOCs, TCLP Pesticides, TCLP Herbicides, and TCLP Metals plus Mercury. All the samples were collected from the 789 Upper Mountain Road Site, located at Lewiston, Niagara County, New York. The samples were hand-delivered under chain of custody (COC) for the requested analyses to Chemtech Consulting Group located in Mountainside, New Jersey. The laboratory verified that samples were received intact, properly sealed, and refrigerated. Sample coolers temperature measured at 2.7 and 2.2 degree Celsius (°C) respectively.

Field Sample ID	Lab Sample ID	Matrix	Analysis	Sampling Date
Sample Delivery Group No. L3837				
789UMR-DSP01-01	L3837-01	Soil/Rock/Slag	Full TCLP	08/25/2020
789UMR-DSP01-02[1]	L3837-04	Soil/Rock/Slag	Full TCLP	08/25/2020
789UMR-DSP02-01	L3837-05	Soil/Rock/Slag	Full TCLP	08/26/2020
789UMR-TP05-0612-01	L3837-06	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP05-1218-01	L3837-07	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP05-1824-01	L3837-08	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP05-3036-01	L3837-09	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP06-0006-01	L3837-10	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP07-1218-01	L3837-11	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP08-1824-01	L3837-12	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP11-0006-01	L3837-13	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP11-0006-02[2]	L3837-16	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP11-0612-01	L3837-17	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP11-2430-01	L3837-18	Soil/Rock/Slag	Full TAL	08/25/2020
789UMR-TP12-0002-01	L3837-19	Soil/Rock/Slag	Full TAL	08/26/2020
789UMR-TP13-0612-01	L3837-20	Soil/Rock/Slag	Full TAL	08/26/2020

[1] A field duplicate of sample 789UMR-DSP01-01
[2] A field duplicate of sample 789UMR-TP11-0006-01
Full TCLP includes, TCLP SVOCs, TCLP Pesticides, TCLP Herbicides, and TCLP Metals plus Hg
Full TAL includes, TAL SVOCs, TAL Pesticides, TAL PCBs, and TAL Metals plus Hg and CN
Hg; Mercury CN: Cyanide

DATA ASSESSMENT

ANALYSIS: TAL SVOC, TCLP SVOC

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "J", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

2. SURROGATE COMPOUNDS
All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured recovery limits were outside laboratory in-house control limits, qualifications were applied as per HW-22 (Revision 5), December 2010 to sample analytes as shown below.

TAL SVOCs: All surrogate compound recoveries were within control limits. No action was required.

TCLP SVOCs: All surrogate compound recoveries were within control limits. No action was required.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: Sample 789UMR-TP11-0006-01 was used for MS/MSD analyses. No problems were found for this criterion.

TCLP SVOCs: Sample 789UMR-DSP01-01 was used for MS/MSD analyses. The MS/MSD recoveries were below the QC limit for pyridine. The non-detect of this analyte reported for 789UMR-DSP01-01 and its field duplicate 789UMR-DSP01-02 were estimated (UJ).

4. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, trip, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Trip blanks measure cross-contamination of samples during shipment. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the amount of contamination present in the QA blanks, the analytes are qualified as per HW-22 (Revision 5), December 2010.

A) Method blank contamination:

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

B) Field or rinse blank contamination:

TAL SVOCs: Not Applicable
TCLP SVOCs: Not Applicable

C) Tentatively Identified Compounds:
Laboratory artifact eluted around retention time 2.22 minute was detected in method blank and associated soil samples. This laboratory artifact was rejected (R) for associated samples 789UMR-TP05-0612-01, 789UMR-TP05-1218-01, 789UMR-TP05-1824-01, 789UMR-TP05-3036-01,

789UMR-TP06-0006-01, 789UMR-TP07-1218-01, 789UMR-TP08-1824-01, 789UMR-TP11-0006-01, 789UMR-TP11-0006-02, 789UMR-TP11-0612-01, 789UMR-TP11-2430-01, 789UMR-TP12-0002-01, and 789UMR-TP13-0612-01.

5. MASS SPECTROMETER TUNING:
Tuning and performance criteria are established to ensure adequate mass resolution, proper identification of compounds and to some degree, sufficient instrument sensitivity. These criteria are not sample specific. Instrument performance is determined using standard materials. Therefore, these criteria should be met in all circumstances. The tuning standard for Semi-volatiles is decafluorotriphenylphosphine (DFTPP). If the mass calibration is in error, all associated data will be classified as unusable "R".

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Response Factor GC/MS:
The response factor measures the instrument's response to specific chemical compounds. All analytes for initial and continuing calibration should meet the minimum relative response factor (RRF) criteria as specified in Method 8270C. If the mean RRF failed the minimum requirement for any target analytes, use professional judgment to qualify positive result as estimated (J+) or rejected (R). All non-detects for that compound will be rejected (R). Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

B) Percent Relative Standard Deviation (%RSD) and Percent Difference (%D):
Percent RSD is calculated from the initial calibration and is used to indicate the stability of the specific compound response factor over increasing concentration. Percent D compares the response factor of the continuing calibration check to the mean relative response factor (RRF) from the initial calibration. Percent D is a measure of the instrument's daily performance. Percent RSD must be $\leq$20% for all target analytes. For the opening or closing continuing calibration verification (CCV), %D must be $\leq$20 for all target compounds. A value outside of these limits indicates potential detection and quantitation errors. For these reasons, all positive results are flagged as estimated (J) and non-detects (UJ) for %D values outside criteria only. If %RSD exceeds 20, positive results may be estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the sample analytes as shown below. Alternately, if the laboratory used a first or second order regression fit of the calibration curve and the r $\geq$ 0.99, then no data validation qualifiers are applied.

TAL SVOCs: For initial calibration performed on August 27, 2020 at 17.33, the %RSDs were greater than (>)20% for 2-Nitroaniline, 2,6-Dinitrotoluene, 3-Nitroaniline, 4-Nitrophenol, 2,4-Dinitrotoluene, 4-Nitroaniline, Benzaldehyde, 2-Nitrophenol, 2,4-Dinitrophenol, and 4,6-Dinitro-2-methylphenol. Since the laboratory replotted the data using a linear curve and/or quadratic regression it met acceptance criteria. No data qualifiers were necessary.

For initial calibration performed on August 24, 2020 at 09.29, the %RSDs was >20% for 2,4-Dinitrophenol. Since the laboratory replotted the data using a linear curve it met acceptance criteria. No data qualifiers were necessary.

In the subsequent CCVs calculated based on amount added, the %D was >20% for 2-nitrophenol and 2,4-dinitrophenol (analyzed on 8/31/2020@12:35). Since, none of the samples were associated with this CCV, no qualification was required.

TCLP SVOCs: No problems were found for this criterion

7. INTERNAL STANDARDS PERFORMANCE GC/MS:
Internal standards (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during every experimental run. The internal standard area count must be in the range of -50% to 100% of the associated continuing calibration internal standard area. The retention time of the internal standards must be within ± 0.5 minute of that in the associated CCV. If the area count is greater than the control limit, all positive results quantitated using that IS are qualified as estimated "J-", and non-detects are not qualified. If the area count is less than the control limit, all positive results for compounds quantitated with that IS are qualified as estimated "J+" and all non-detects are qualified "R".

If an internal standard retention time was not within the control limits, the reviewer will use professional judgment to determine either partial or total rejection of the data for that sample analysis. Qualifications were applied to sample analytes as shown below.

TAL SVOCs: No problems were found for this criterion.
TCLP SVOCs: No problems were found for this criterion.

8. FIELD DUPLICATES:

TAL SVOCs: For field sample 789UMR-TP11-0006-01 the field duplicate is 789UMR-TP11-0006-02: Dimethylphthalate concentrations were less than contract required quantitation limit (CRQL) in sample 789UMR-TP11-0006-01 and above the CRQL in field duplicate 789UMR-TP11-0006-02; the RPD is above 50% for dimethyl phthalate. Dimethylphthalate was qualified as estimated (J) in sample 789UMR-TP11-0006-01 and its field 789UMR-TP11-0006-02.

TCLP SVOCs: Field duplicate and sample pair 789UMR-DSP01-02 and 789UMR-DSP01-01 yielded comparable results.

9. COMPOUND IDENTIFICATION:
Target compounds are identified on the GC/MS by using the analyte relative retention time (RRT) and by comparison to the ion spectra obtained from known standards. For the results to be a positive hit, the sample peak must be within a window of 0.06 RRT units of the

standard compound and have an ion spectrum which has a ratio of the primary and secondary m/z intensities within 15% of that in the standard compound. For the tentatively identified compounds (TIC) the ion spectra must match accurately. In the cases where there is not an adequate ion spectrum match, the laboratory may have provided false positive identifications. Qualifications were applied to the samples and analytes as shown below.

TAL SVOCs: For all TICs, where there was a presumptive evidence of a match as compared to the reference spectra (>85% match), results were qualified as tentatively identified (JN) with approximated concentrations. TICs identified and reported by the laboratory with a poor match compared to the reference spectra (less than [<]85% match) were changed to "Unknown" by the validator and results were qualified as estimated (J) (refer to qualified Form Is).

10. METHOD NON-COMPLIANCE:

None

11. FIELD DOCUMENTATION:

None

12. OTHERS PROBLEMS:

As per the case narrative, sample analysis was performed by Method 8270D. The laboratory used the %RSD less than or equal to (≤) 15 instead of 20% to assess the initial calibrations. The data validation and data qualifications were based on requirement of %RSD ≤20 established in Method 8270D and the EPA Region II data validation SOP.

TAL SVOCs: The blank spike PB131281BS (file BF121476.D) analyzed on 8/31/2020 yielded %R within the QC limits, data qualification was not required.

TCLP SVOCs: The blank spike PB131374BS (file BF121517.D) analyzed on 9/02/2020 yielded %R within the QC limits, data qualification was not required.

13. DILUTIONS, RE-EXTRACTIONS and REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a dilution analysis.

None

ANALYSIS: TAL PESTICIDES, TCLP PESTICIDES

1. HOLDING TIME:

The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits) if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: No problems were found for this criterion.
TCLP Pesticides No problems were found for this criterion.

2. SURROGATES

All samples are spiked with surrogate compounds prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery was outside the laboratory in-house control limits, qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: In samples 789UMR-TP07-1218-01, 789UMR-TP11-0612-01, and 789UMR-TP11-2430-01, the Decachlorobiphenyl surrogate recoveries in column 1 were above the lab established control limits. Detected compounds are qualified J+. Non-detected compounds are not qualified.

Decachlorobiphenyl (Column 1) 789UMR-TP07-1218-01 - 4,4'-DDE
Decachlorobiphenyl (Column 1) 789UMR-TP11-0612-01 - 4,4'-DDE and 4,4-DDT
Decachlorobiphenyl (Column 1) 789UMR-TP11-2430-01 - 4,4'-DDE, 4,4-DDD, and 4,4-DDT

TCLP Pesticides: No problems were found for this criterion.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):

MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: Sample 789UMR-TP11-0006-01 was used for MS/MSD analyses; No problems were found for this criterion.

TCLP Pesticides: Sample 789UMR-DSP01-01 was used for the MS/MSD analysis. No problems were found for this criterion.

4. LABORATORY CONTROL SAMPLE (LCS) RECOVERY:

LCS data is generated to determine the long-term precision and accuracy of the analytical method. The LCS may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: Blank spike PB131289BS (file PL061084.D) analyzed on 8/31/2020 yielded %R within the QC limits, data qualification was not required.

TCLP Pesticides: Blank spike PB131373BS analyzed on 9/02/2020 yielded %R within the QC limits, data qualification was not required.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects, "U". Qualifications were applied to the samples and analytes as shown below.

A) Method/Instrument blank contamination:

TAL Pesticides: No problems were found for this criterion.
TCLP Pesticides: No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Initial Calibration: For pesticide analysis, the relative standard deviation (RSD) must be ≤20%. If the RSD exceeds 20% for any analyte, qualify all associated positive results as estimated (J) and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: No problems were found for this criterion.
TCLP Pesticides: No problems were found for this criterion.

B) Continuing Calibration Verification (CCV): The percent difference (%D) between the calibration factor (CF) for each of the analytes in the CCV and the mean calibration factor from the initial calibration must be greater than or equal to -20% and less than or equal to 20%. If the absolute value of %D is >20, the associated positive result will be qualified as estimated (J) and the associated non-detected result will be estimated (UJ). Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: No problems were found for this criterion.

TCLP Pesticides: The continuing calibration file ID PL061209.D (analyzed on 9/02/2020@18:44) exceeded %D criteria for heptachlor epoxide in 2nd column. Associated non-detected heptachlor epoxide is qualified UJ in samples 789UMR-DSP01-02 and 789UMR-DSP02-01.

7. FIELD DUPLICATES:

TAL Pesticides: Field duplicate and sample pair 789UMR-TP11-0006-1 and 789UMR-TP11-0006-02 yielded comparable results.

TCLP Pesticides: Field duplicate and sample pair 789UMR-DSP01-01 and 789UMR-DSP01-02 yielded comparable results.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10 ug/mL in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

TAL Pesticides: The following samples have percent differences between analyte results in the range of 26-70%. Detected compounds are qualified J.

789UMR-TP05-1218-01: J – 4,4-DDE and 4,4-DDT
789UMR-TP05-1824-01: J – 4,4-DDT
789UMR-TP05-3036-01: J – 4,4-DDT
789UMR-TP06-0006-01: J – 4,4-DDT

The following sample has percent difference between analyte results exceeding 50% and the result is below contract required quantitation limit (CRQL). Detected compound is qualified U. Reported sample concentration has been elevated to the CRQL.

789UMR-TP05-0612-01: 4,4'-DDT (U at the CRQL)
789UMR-TP12-0002-01: alpha-chlordane (U at the CRQL)

TCLP Pesticides: No problems were found for this criterion.

9. METHOD NON-COMPLIANCE:

TAL Pesticides: Laboratory did not generated Form 10 for Sample No. 789UMR-TP08-1824-01 for 4,4-DDE due to the 1st column result was below MDL.

TCLP Pesticides: No problems were found for this criterion.

10. FIELD DOCUMENTATION:

No problems were found for this criterion.

11. OTHERS:

No problems were found for this criterion.

12. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following sample results were reported from a re-analysis.
None

ANALYSIS: PCB

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". Use professional judgment to qualify the non-detects (sample quantitation limits), if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. SURROGATES:
All samples are spiked with a surrogate compound prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the laboratory QC limits, qualifications were applied to samples and analytes as shown below.

The recoveries of surrogate compounds decachlorobiphenyl (DCB) and/or tetrachloro-m-xylene (TCMX) exceeded the laboratory control limits in the undiluted analysis of samples 789UMR-TP05-0612-01, 789UMR-TP05-1824-01, 789UMR-TP05-3036-01 and 789UMR-TP11-2430-01. Only detected Aroclor-1254 result was qualified as estimated J in sample 789UMR-TP05-0612-01. Non-detected results were not qualified based on the high surrogate recoveries.

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Sample 789UMR-TP11-0006-01 was used for MS/MSD analyses. The MS/MSD recoveries of Aroclor-1260 exceeded the laboratory control limits and relative percent difference also exceeded the QC limit. The target analytes were not detected in the unspiked sample; qualification of the data for non-detected results was not required for Aroclor-1260.

4. Laboratory Control Samples (LCS):
LCS data provides information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

No problems were found for this criterion.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects U. Qualifications were applied to the samples and analytes as shown below.

A) Method blank contamination:

No problems were found for this criterion.

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):
For Aroclor analysis, if RSD exceeds 20%, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

B) Percent Difference (%D):
For initial calibration verification (ICV), if the %D exceeds 30 for any analytes, estimate (J) all associated positive results and use professional judgment to qualify non-detects. For opening continuing calibration verification (CCV), or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 20 for any analytes, qualify all associated positive results "J" and non-detects "UJ". For closing CCV, if %D exceeds 20% for any analytes, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

7. FIELD DUPLICATES:

Aroclors were not detected in field duplicate and sample pair 789UMR-TP11-0006-02 and 789UMR-TP11-0006-01.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns and a GC/MS confirmation is required if the concentration exceeds 10ng/ml in the final sample extract. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

No problems were found for this criterion.

11. OTHER PROBLEMS:

None

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following samples were re-analyzed. Data reviewer used the original samples for reporting purpose.

None

ANALYSIS: HERBICIDES, TCLP HERBICIDES

1. HOLDING TIME:
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time is exceeded, the data may not be valid. Those analytes detected in the samples whose holding time has been exceeded will be qualified as estimated, "J". The non-detects (sample quantitation limits) will be flagged as estimated, "UJ", or unusable, "R", if the holding times are grossly exceeded. Qualifications were applied to the samples and analytes as shown below.

No problems were found for this criterion.

2. SURROGATES:
All samples are spiked with a surrogate compound prior to sample preparation to evaluate overall laboratory performance and efficiency of the analytical technique. If the measured surrogate recovery were outside the laboratory QC limits of 43 – 172%, qualifications were

applied to samples and analytes as shown below.

Herbicides: No problems were found for this criterion.

TCLP Herbicides: The recoveries of the surrogate 2,4-DCAA were below lower QC limit but greater (>) than 10% on the column 1 in the initial and re-analyses of samples 789UMR-DSP01-02 and 789UMR-DSP02-01. The recoveries for 2,4-DCAA were within the control limits on the column 2 in the initial and re-analyses of samples 789UMR-DSP01-02 and 789UMR-DSP02-01. Target analytes were not detected in any of the samples. Based on professional judgement, the non-detected results for samples 789UMR-DSP01-02 and 789UMR-DSP02-01 were qualified as estimated (UJ).

3. MATRIX SPIKE/MATRIX SPIKE DUPLICATES (MS/MSD):
MS/MSD data are generated to determine the long-term precision and accuracy of the analytical method in various matrices. The MS/MSD data may be used in conjunction with other QC criteria for additional qualification of data. Qualifications were applied to the samples and analytes as shown below.

Herbicides: Sample 789UMR-TP11-0006-01 was used for MS/MSD analyses. The MS/MSD recoveries were below the QC limits and RPD was above the QC limit for dicamba. The non-detect of this analyte reported for 789UMR-TP11-0006-01 and its field duplicate 789UMR-TP11-0006-02 were estimated (UJ).

TCLP Herbicides: Sample 789UMR-DSP01-01 was used for MS/MSD analyses; the MS/MSD recoveries exceeded the QC limits for 2,4,5-TP(Silvex). Since 2,4,5-TP(Silvex) was not detected in sample 789UMR-DSP01-01, no action was required.

4. LABORATORY CONTROL SAMPLES (LCS):
The LCS data provide information on the accuracy of the analytical method and laboratory performance. If LCS recoveries fell outside of the acceptable limits, qualifications were applied to the associated samples and compounds as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

5. BLANK CONTAMINATION:
Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Method blanks measure laboratory contamination. Field and rinse blanks measure cross-contamination of samples during field operations. Depending on the concentration of the analyte in the blank, the analytes are qualified as non-detects (U). Qualifications were applied to the samples and analytes as shown below.
A) Method blank contamination:

Herbicide: Target analytes were not detected.
TCLP Herbicides: Target analytes were not detected

B) Field or rinse blank contamination:

Not applicable.

6. CALIBRATION:
Satisfactory instrument calibration is established to ensure that the instrument is capable of producing acceptable quantitative data. An initial calibration demonstrates that the instrument is capable of giving acceptable performance at the beginning of an experimental sequence. The continuing calibration checks document that the instrument is giving satisfactory daily performance.

A) Percent Relative Standard Deviation (%RSD):
For herbicide analysis, if %RSD exceeds 20% for any analytes, qualify all associated positive results "J" and use professional judgment to qualify non-detects. Qualifications were applied to the samples and analytes as shown below.

Herbicides: No problems were found for this criterion.
TCLP Herbicides: No problems were found for this criterion.

B) Percent Difference (%D):
For initial calibration verification (ICV), if the %D exceeds 30% for any analytes, estimate (J) all associated positive results and use professional judgment to qualify non-detects. For opening continuing calibration verification (CCV), or closing CCV that is used as an opening CCV for the next 12-hour period, if %D exceeds 20% for any analytes, qualify all associated positive results "J" and non-detects "UJ". For closing CCV, if %D exceeds 25% for any analytes, qualify all associated positive results "J" and non-detects "UJ". Qualifications were applied to the samples and analytes as shown below.

Herbicides: No problems were found with the ICVs or CCVs.
TCLP Herbicides: No problems were found with the ICVs or CCVs.

7. FIELD DUPLICATES:
Field duplicates may be taken and analyzed as an indication of overall precision. This analysis measures both field and laboratory precision. A control limit of 50% for the RPD was used for original and duplicate sample values. For field duplicate analysis that did not meet the technical criteria, the action was applied to only the field sample and its duplicate.

Herbicides: Herbicides were not detected in field duplicate and sample pair 789UMR-TP11-0006-02 and 789UMR-TP11-0006-01.

TCLP Herbicides: TCLP Herbicides were not detected in field duplicate and sample pair 789UMR-DSP01-02 and 789UMR-DSP01-01.

8. COMPOUND IDENTIFICATION:
The retention times of reported compounds must fall within the calculated retention time windows for the two chromatographic columns. Qualifications were applied to the samples and analytes as shown below.

Target analytes were not detected in any samples.

9. METHOD NON-COMPLIANCE:

None

10. FIELD DOCUMENTATION:

No problem was observed.

11. OTHER PROBLEMS:

None

12. DILUTIONS, RE-EXTRACTIONS & RE-ANALYSIS:
Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report. The following samples were re-analyzed. Data reviewer used the original samples for reporting purpose.

Herbicides: None
TCLP Herbicides: 789UMR-DSP01-02 and 789UMR-DSP02-01

ANALYSIS: TAL METALS plus MERCURY, TCLP Metals plus Mercury

The current SOPs HW-3A (Revision 0) July 2015, USEPA Region II for the evaluation of metals data generated through Statement of Work ISM02.2, and the National Functional Guidelines for Superfund Inorganic Methods Data Review, January 2017 (based on SOW02.4) were followed for data qualifications.

1. HOLDING TIME AND PRESERVATION
The amount of an analyte in a sample can change with time due to chemical instability, degradation, volatilization, etc. If the specified holding time or pH (aqueous samples) is not within the acceptable range, the data may not be valid. Those analytes detected in the samples whose holding times (180 days for metals, 28 days for mercury, and 14 days for cyanide) have not been met, will be qualified as estimated, "J"; the non-detects will be flagged as unusable, "R".

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

2. CALIBRATION
Method requirements for satisfactory instrument calibration are established to ensure that the instrument is capable of producing acceptable quantitative data for the metals, mercury, and cyanide. Initial Calibration Verification (ICV) demonstrates that the instrument is capable of acceptable performance at the beginning of the analytical run. Continuing Calibration Verification (CCV) demonstrates that the initial calibration is still valid by checking the performance of the instrument on a continuing basis.

A) INITIAL CALIBRATION

A blank and at least five calibration standards shall be used to establish each analytical curve. At least one of these standards shall be at or below the contract required quantitation limit (CRQL). The calibration curve shall be fitted using linear regression or weighted linear regression. The curve may be forced through zero. The curve must have a correlation coefficient ≥ 0.995. The percent differences calculated for all of the non-zero standards must be within ±30% of the true value of the standard. The y-intercept of the curve must be less than the CRQL.

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

B) INITIAL AND CONTINUING CALIBRATION VERIFICATION

Immediately after each system has been calibrated, the accuracy of the initial calibration must be verified and documented for each target analyte by the analysis of an ICV solution. The CCV standard shall be analyzed at a frequency of every two hours during an analytical run. The CCV standard shall also be analyzed at the beginning of the run, and again after the last analytical sample. The percent recovery acceptable limits for ICV/CCV are 90 – 110%.

TAL Metals: No problems were found for this criterion.
TCLP Metals: No problems were found for this criterion.

3. BLANK CONTAMINATION

Quality assurance (QA) blanks, i.e., method, field, or rinse blanks are prepared to identify any contamination, which may have been introduced into the samples during sample preparation or field activity. Calibration blanks including initial calibration blank (ICB) and continuing calibration blank (CCB) are used to ensure a stable instrument baseline before and during sample analysis. The preparation blank is used to assess the level of contamination introduced to the analytical samples throughout the sample preparation process. Field and rinse blanks measure cross-contamination of samples during field operations. Qualifications were applied to the samples and analytes as shown below.

TAL Metals: No problems were found for this criterion.

TCLP Metals: The following analyte have results greater than or equal MDLs and less than or equal to CRQL. The associated leachate blank (PB131294TB for metals and PB131300TB for mercury) are reported less than CRQL and greater than MDL. Detects are qualified as U. Sample results are reported at CRQL.

Selenium and Mercury
789UMR-DSP01-02 and 789UMR-DSP02-01

4. INTERFERENCE CHECK SAMPLE

The Interference Check Sample (ICS) verifies the analytical instrument's ability to overcome interferences typical of those found in samples. The laboratory should have analyzed and reported ICS results for all elements being reported from the analytical run and for all interferents (target and non-target) for these reported elements. The ICS consists of two solutions: Solution A and Solution AB. Solution A consists of the interferents, and Solution

AB consists of the analytes mixed with the interferents. Results for the analysis of ICS Solution must fall within the control limits of ± 20% or ±CRQL (whichever is greater) of the true value for the analytes and interferents included in the solution. If results that are ≥ MDL are observed for analytes that are not present in the ICS solution, the possibility of false positives exists. If negative results are observed for analytes that are not present in the ICS solution, and their absolute value is ≥ MDL, the possibility of false negatives in the samples exists. In general, ICP sample data can be accepted if the concentrations of aluminum, calcium, iron, and magnesium in the sample are found to be less than or equal to their respective concentrations in the ICS.

TAL Metals: The ICSA solution yielded recoveries >120% for copper and manganese and < 80% for cadmium; however the recovered copper, manganese, and cadmium concentrations were within the limits of true value ± CRQL. Data qualification was not applied.

The iron concentrations in soil samples 789UMR-TP05-0612-01, 789UMR-TP05-1218-01, 789UMR-TP06-0006-01, 789UMR-TP07-1218-01, 789UMR-TP08-1824-01, 789UMR-TP11-0006-01, 789UMR-TP11-0006-02, and 789UMR-TP13-0612-01 and calcium concentration in samples 789UMR-TP08-1824-01 and 789UMR-TP13-0612-01 were greater than that in the ICSA solution. Most of the concentrations of impacted analytes (beryllium, cobalt, nickel, silver, vanadium, arsenic, thallium, and/or zinc) in these samples were at least two to three times those detected in the ICSA solution; data qualifications were not required with the following exceptions.

Beryllium (J+): 789UMR-TP05-0612-01, 789UMR-TP05-1218-01, and 789UMR-TP11-0006-02
Thallium (J+): 789UMR-TP08-1824-01
Silver (J+): 789UMR-TP13-0612-01

Negative result was observed for antimony which are not present in the ICSA solution, and their absolute values were ≥ MDLs. For samples with comparable or higher levels of aluminum, calcium, iron, and/or magnesium results, if the antimony concentration are ≥ MDL but < 10x the absolute value of the negative result, their results were qualified as estimated low (J-) and non-detects were estimated (UJ). For sample concentrations were > 10x the absolute value of the negative results, no qualification was required.

Antimony (J- or UJ): 789UMR-TP05-1218-01, 789UMR-TP06-0006-01, 789UMR-TP07-1218-01, 789UMR-TP08-1824-01, 789UMR-TP11-0006-01, 789UMR-TP11-0006-02, and 789UMR-TP13-0612-01

Note: Despite the method requirement, potassium and sodium were not included in the ICSAB solution that the lab obtained from the commercial vendor.

TCLP Metals: No problems were found for this criterion.

5. SPIKE SAMPLE ANALYSIS

The spiked sample analysis is designed to provide information about the effect of each sample matrix on the sample preparation procedures and the measurement methodology. The spike percent recovery (%R) shall be within the established acceptance limits of 75 – 125% or lab established QC limits. However, spike recovery limits do not apply when the sample concentration is ≥ four times (4x) the spike added. For a matrix spike analysis that does not

meet the technical criteria, the action was applied to only the field sample used to prepare the matrix spike sample.

TAL Metals: Sample 789UMR-TP11-0006-01 was used for the MS/MSD analyses which yielded non-compliant recoveries less than the lower control limit for antimony, arsenic, beryllium, chromium, selenium, silver, and vanadium. The detected and non-detected results reported for sample 789UMR-TP11-0006-01 and its field duplicate 789UMR-TP11-0006-02 were estimated (J or UJ) for arsenic, beryllium, chromium, selenium, silver, and vanadium. Antimony was previously qualified as (J+) due to ICP interference QC criteria, therefore, no further action was required.

Sample 789UMR-TP11-0006-01 was used for the MS/MSD analyses which yielded non-compliant recoveries less than 30% for copper. The detected result reported for sample 789UMR-TP11-0006-01 and its field duplicate 789UMR-TP11-0006-02 were estimated (J-) for copper.

TAL Mercury: The MS analysis was performed on sample OF-3-20200827, unrelated to this project. MS/MSD recoveries were within the QC limits, no action required.

TCLP Metals: Sample 789UMR-DSP01-01 was used for the MS/MSD analyses, which yielded acceptable recoveries.

6. DUPLICATE SAMPLE ANALYSIS

The objective of duplicate sample analysis is to demonstrate acceptable method precision by the laboratory at the time of analysis. A control limit of 20% (aqueous) and/or 35% (solid) for the relative percent difference (RPD) shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For a duplicate sample analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the duplicate sample.

TAL Metals: Sample 789UMR-TP11-0006-01 was used for duplicate analysis which yielded comparable results, therefore data qualification was not required.

TAL Mercury: The lab duplicate analyses was performed on sample OF-3-20200827, unrelated to this project. No action required.

TCLP Metals: Sample 789UMR-DSP01-01 used for duplicate analysis met the technical criteria for all analytes except selenium and mercury (difference > CRQL). The non-detect results reported in sample 789UMR-DSP01-01 were estimated (UJ) for selenium and mercury.

7. FIELD DUPLICATE

Field duplicates may be taken and analyzed as an indication of overall precision. These analyses measure both field and laboratory precision. A control limit of 50% for the RPD shall be used for original and duplicate sample values ≥ five times (5x) the CRQL. A control limit of two times the CRQL shall be used if either the sample or duplicate value is < 5x the CRQL. For field duplicates analysis that does not meet the technical criteria, the action was applied to only the field sample and it's duplicate.

Field sample and field duplicate pair 789UMR-TP11-0006-01 and 789UMR-TP11-0006-02 met the technical criteria for all analytes except copper (RPD>50%). Since, copper was previously qualified due to non-compliant MS/MSD recoveries in sample 789UMR-TP11-0006-01 and its field duplicate 789UMR-TP11-0006-02, no further qualification was required.

8. LABORATORY CONTROL SAMPLE

The Laboratory Control Sample (LCS) serves as a monitor of the overall performance of each step during the analysis, including sample preparation. Aqueous/water, soil/sediment, wipe, and filter LCSs shall be analyzed for each analyte utilizing the same sample preparations, analytical methods, and Quality Assurance/Quality Control (QA/QC) procedures as employed for the samples. All LCS %R must fall within the control limits of 70-130%, except for antimony and silver which must fall within the control limits of 50-150%.

TAL Metals: No problems were found for this criterion in all analyses.
TCLP Metals: No problems were found for this criterion in all analyses.

9. ICP SERIAL DILUTION

The serial dilution of samples quantitated by inductively coupled plasma determines whether or not significant physical or chemical interferences exist due to sample matrix. If the analyte concentration is sufficiently high [concentration in the original sample is > 25 times (25x) the CRQL], the difference between the original determination and the serial dilution analysis (a five-fold dilution) after correction for dilution shall be less than 15% (10% for aqueous sample). For a serial dilution analysis that does not meet the technical criteria, the action was applied to only the field sample used to prepare the serial dilution sample.

TAL Metals: The laboratory performed serial dilution analysis on sample 789UMR-TP11-0006-01. The difference between the source and the serial dilution analysis was <20%D for all analytes except aluminum, cooper, iron, manganese, and zinc. The detected results for aluminum, iron, manganese, and zinc were estimated (J) in sample 789UMR-TP11-0006-01 and its field duplicate sample 789UMR-TP11-0006-02. Since, copper was previously qualified due the other QC criteria, no further action was required.

TCLP Metals: No problems were found for this criterion in all analyses.

10. METHOD NON-COMPLIANCE:

TAL Metals: No problems were identified.
TCLP Metals: No problems were identified.

11. FIELD DOCUMENTATION:

TAL and TCLP Metals: No problems were identified.

12. OTHER PROBLEMS:

TAL Metals: Due to non-compliant MS/MSD results, laboratory qualified the associated analytes with N qualifier on all Form Is for metal results. Data reviewer removed the N qualifier from Form Is and initialed them.

TAL Mercury: Mercury was diluted 2 times(2x) in sample 789UMR-TP05-3036-01, due to high concentration in initial run,

13. DILUTIONS, RE-EXTRACTIONS & REANALYSIS:

Samples may be re-analyzed for dilution, re-extraction and for other QC reasons. In such cases, the best result values are consolidated in one single report and the other report is marked as not to be used. The following sample results were reported from a dilution analysis.

Mercury: 2x – 789UMR-TP05-3036-01

Cyanide, RCRA Characteristics:

Total Cyanide: No qualification was required, data is acceptable as reported.

RCRA Characteristics:

A) Reactive Cyanide: For all three rock/slag/clay samples, concentrations of reactive cyanide were reported below the MDL.

B) Reactive Sulfide: For all all three rock/slag/clay samples, concentrations of reactive sulfide were reported below the MDL.

C) Corrosivity (as pH): For all the all three rock/slag/clay samples, corrosivity values were reported between 8.40 to 8.61 pH units.

Corrosivity as pH: All three rock/slag/clay samples were qualified as estimated "J" due to exceeding holding time criteria: Samples were collected on August 26, 2020 and analyzed on August 28, 2020.

Corrosivity as pH -> "J" – 789UMR-DSP01-01, 789UMR-DSP01-02, and 789UMR-DSP02-01.

D) Ignitability: All liquid waste and waste samples did not flash up to 200 degree Fahrenheit (^{0}F).

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09	L3837-10
Sample weight (g)	30.05	30.07	30.09	30.06	30.04
Percent Moisture	5.4	7	6	4.3	13.9
Dilution Factor	1	1	1	1	1
TAL SEMIVOLATILES - (ug/Kg)					
Benzaldehyde	110 U	110 U	110 U	110 U	120 U
Phenol	53.7 U	54.5 U	53.9 U	53 U	59 U
bis(2-Chloroethyl)ether	41.2 U	41.9 U	41.4 U	40.7 U	45.3 U
2-Chlorophenol	48.1 U	48.9 U	48.3 U	47.5 U	52.8 U
2-Methylphenol	41.6 U	42.3 U	41.8 U	41.1 U	45.7 U
2,2-oxybis(1-Chloropropane)	62.1 U	63.2 U	62.5 U	61.4 U	68.3 U
Acetophenone	56.3 U	57.2 U	56.5 U	55.6 U	61.8 U
3+4-Methylphenols	66 U	67.1 U	66.3 U	65.2 U	72.5 U
n-Nitroso-di-n-propylamine	49.5 U	50.3 U	49.7 U	48.9 U	54.4 U
Hexachloroethane	60.1 U	61.1 U	60.4 U	59.4 U	66 U
Nitrobenzene	59.9 U	60.9 U	60.2 U	59.2 U	65.9 U
Isophorone	65.6 U	66.7 U	65.9 U	64.8 U	72.1 U
2-Nitrophenol	95 U	96.6 U	95.5 U	93.9 U	100 U
2,4-Dimethylphenol	72.5 U	73.7 U	72.8 U	71.6 U	79.6 U
bis(2-Chloroethoxy)methane	64.8 U	65.9 U	65.2 U	64.1 U	71.3 U
2,4-Dichlorophenol	64.6 U	65.7 U	65 U	63.9 U	71.1 U
Naphthalene	58.3 U	59.3 U	58.6 U	57.6 U	64.1 U
4-Chloroaniline	84.9 U	86.3 U	85.3 U	83.9 U	93.3 U
Hexachlorobutadiene	59.1 U	60.1 U	59.4 U	58.4 U	65 U
Caprolactam	160 U	160 U	160 U	160 U	180 U
4-Chloro-3-methylphenol	90.6 U	92.1 U	91 U	89.5 U	99.5 U
2-Methylnaphthalene	96.9 U	98.5 U	97.4 U	95.7 U	110 U
Hexachlorocyclopentadiene	190 U	190 U	190 U	190 U	210 U
2,4,6-Trichlorophenol	73.2 U	74.4 U	73.5 U	72.3 U	80.4 U
2,4,5-Trichlorophenol	75 U	76.2 U	75.4 U	74.1 U	82.4 U
1,1-Biphenyl	77.1 U	78.4 U	77.5 U	76.2 U	84.8 U
2-Chloronaphthalene	67.2 U	68.3 U	67.5 U	66.4 U	73.8 U
2-Nitroaniline	100 U	100 U	100 U	100 U	110 U
Dimethylphthalate	**140 J**	**120 J**	**78.6 J**	**99.9 J**	**180 J**
Acenaphthylene	72 U	73.2 U	72.4 U	71.1 U	79.1 U
2,6-Dinitrotoluene	66.8 U	67.9 U	67.1 U	66 U	73.4 U
3-Nitroaniline	87.8 U	89.3 U	88.3 U	86.8 U	96.5 U
Acenaphthene	71.7 U	72.9 U	72 U	70.8 U	78.8 U
2,4-Dinitrophenol	240 U	240 U	240 U	240 U	260 U
4-Nitrophenol	120 U	120 U	120 U	120 U	130 U
Dibenzofuran	72.1 U	73.3 U	72.5 U	71.3 U	79.3 U
2,4-Dinitrotoluene	110 U	110 U	110 U	110 U	120 U
Diethylphthalate	65.6 U	66.7 U	66 U	64.9 U	72.1 U
4-Chlorophenyl-phenylether	76.5 U	77.8 U	76.9 U	75.6 U	84.1 U
Fluorene	85.1 U	86.5 U	85.5 U	84.1 U	93.5 U
4-Nitroaniline	100 U	100 U	100 U	100 U	110 U
4,6-Dinitro-2-methylphenol	120 U	120 U	120 U	120 U	130 U
n-Nitrosodiphenylamine	51.5 U	52.4 U	51.8 U	50.9 U	56.6 U
4-Bromophenyl-phenylether	51.6 U	52.5 U	51.9 U	51 U	56.7 U
Hexachlorobenzene	51.8 U	52.7 U	52.1 U	51.2 U	57 U
Atrazine	76.6 U	77.8 U	77 U	75.7 U	84.2 U

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09	L3837-10
Sample weight (g)	30.05	30.07	30.09	30.06	30.04
Percent Moisture	5.4	7	6	4.3	13.9
Dilution Factor	1	1	1	1	1
TAL SEMIVOLATILES - (ug/Kg)					
Pentachlorophenol	140 U	150 U	140 U	140 U	160 U
Phenanthrene	**150 J**	**120 J**	72.1 U	70.8 U	**220**
Anthracene	91.7 U	93.2 U	92.2 U	90.6 U	100 U
Carbazole	99 U	100 U	99.5 U	97.9 U	110 U
Di-n-butylphthalate	130 U	130 U	130 U	130 U	140 U
Fluoranthene	**270**	**260**	110 U	110 U	**490**
Pyrene	**290**	**280**	59.9 U	58.9 U	**470**
Butylbenzylphthalate	98.4 U	100 U	98.9 U	97.2 U	110 U
3,3-Dichlorobenzidine	81.2 U	82.5 U	81.6 U	80.2 U	89.2 U
Benzo(a)anthracene	**180**	**190**	59 U	58 U	**220**
Chrysene	**170 J**	**160 J**	61 U	60 U	**260**
Bis(2-ethylhexyl)phthalate	110 U	110 U	110 U	110 U	120 U
Di-n-octyl phthalate	120 U	120 U	120 U	120 U	130 U
Benzo(b)fluoranthene	**180**	**190**	70.8 U	69.6 U	**330**
Benzo(k)fluoranthene	57 U	58 U	57.3 U	56.4 U	**120 J**
Benzo(a)pyrene	**140 J**	**150 J**	66.5 U	65.4 U	**240**
Indeno(1,2,3-cd)pyrene	140 U	140 U	140 U	140 U	**170 J**
Dibenzo(a,h)anthracene	73.4 U	74.6 U	73.8 U	72.5 U	80.7 U
Benzo(g,h,i)perylene	**100 J**	**110 J**	62 U	61 U	**210**
1,2,4,5-Tetrachlorobenzene	67 U	68.1 U	67.3 U	66.2 U	73.6 U
1,4-Dioxane	69.8 U	71 U	70.2 U	69 U	76.7 U
2,3,4,6-Tetrachlorophenol	87 U	88.4 U	87.4 U	86 U	95.6 U

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01
Lab sample ID No.:	L3837-11	L3837-12	L3837-13	L3837-16	L3837-17	L3837-18
Sample weight (g)	30.08	30.05	30.07	30.09	30.05	30.07
Percent Moisture	7.4	7.1	7.8	7.7	4.9	3.3
Dilution Factor	1	1	1	1	1	1
TAL SEMIVOLATILES - (ug/Kg)						
Benzaldehyde	110 U	110 U	110 U	110 U	110 U	100 U
Phenol	54.8 U	54.6 U	55 U	54.9 U	53.4 U	52.5 U
bis(2-Chloroethyl)ether	42.1 U	42 U	42.3 U	42.2 U	41 U	40.3 U
2-Chlorophenol	49.1 U	49 U	49.3 U	49.2 U	47.8 U	47 U
2-Methylphenol	42.5 U	42.4 U	42.7 U	42.6 U	41.4 U	40.7 U
2,2-oxybis(1-Chloropropane)	63.4 U	63.3 U	63.7 U	63.6 U	61.8 U	60.7 U
Acetophenone	57.4 U	57.3 U	57.7 U	57.6 U	56 U	55 U
3+4-Methylphenols	67.3 U	67.2 U	67.7 U	67.5 U	65.6 U	64.5 U
n-Nitroso-di-n-propylamine	50.5 U	50.4 U	50.7 U	50.7 U	49.2 U	48.4 U
Hexachloroethane	61.3 U	61.2 U	61.6 U	61.5 U	59.8 U	58.7 U
Nitrobenzene	61.1 U	61 U	61.4 U	61.3 U	59.6 U	58.6 U
Isophorone	66.9 U	66.8 U	67.2 U	67.1 U	65.2 U	64.1 U
2-Nitrophenol	96.9 U	96.7 U	97.4 U	97.2 U	94.5 U	92.9 U
2,4-Dimethylphenol	73.9 U	73.8 U	74.3 U	74.2 U	72.1 U	70.8 U
bis(2-Chloroethoxy)methane	66.2 U	66 U	66.5 U	66.4 U	64.5 U	63.4 U
2,4-Dichlorophenol	66 U	65.8 U	66.3 U	66.2 U	64.3 U	63.2 U
Naphthalene	59.5 U	59.4 U	59.8 U	59.7 U	58 U	57 U
4-Chloroaniline	86.6 U	86.4 U	87 U	86.9 U	84.4 U	83 U
Hexachlorobutadiene	60.3 U	60.2 U	60.6 U	60.5 U	58.8 U	57.8 U
Caprolactam	170 U	170 U	170 U	170 U	160 U	160 U
4-Chloro-3-methylphenol	92.4 U	92.2 U	92.9 U	92.7 U	90.1 U	88.5 U
2-Methylnaphthalene	98.9 U	98.6 U	99.3 U	99.2 U	96.4 U	94.7 U
Hexachlorocyclopentadiene	190 U	190 U	190 U	190 U	190 U	190 U
2,4,6-Trichlorophenol	74.7 U	74.5 U	75 U	74.9 U	72.8 U	71.5 U
2,4,5-Trichlorophenol	76.5 U	76.3 U	76.9 U	76.7 U	74.6 U	73.3 U
1,1-Biphenyl	78.7 U	78.5 U	79.1 U	78.9 U	76.7 U	75.4 U
2-Chloronaphthalene	68.6 U	68.4 U	68.9 U	68.8 U	66.8 U	65.7 U
2-Nitroaniline	100 U	100 U	100 U	100 U	100 U	99 U
Dimethylphthalate	**150 J**	**90.5 J**	**95.2 J**	**180 J**	**200**	**160 J**
Acenaphthylene	73.5 U	73.3 U	73.8 U	73.7 U	71.6 U	70.4 U
2,6-Dinitrotoluene	68.2 U	68 U	68.5 U	68.4 U	66.5 U	65.3 U
3-Nitroaniline	89.6 U	89.4 U	90.1 U	89.9 U	87.4 U	85.9 U
Acenaphthene	73.2 U	73 U	73.5 U	73.4 U	71.3 U	70.1 U
2,4-Dinitrophenol	240 U	240 U	250 U	250 U	240 U	230 U
4-Nitrophenol	120 U	120 U	120 U	120 U	120 U	120 U
Dibenzofuran	73.6 U	73.5 U	74 U	73.8 U	71.8 U	70.5 U
2,4-Dinitrotoluene	110 U	110 U	110 U	110 U	110 U	110 U
Diethylphthalate	67 U	66.8 U	67.3 U	67.2 U	65.3 U	64.2 U
4-Chlorophenyl-phenylether	78.1 U	77.9 U	78.5 U	78.3 U	76.1 U	74.8 U
Fluorene	86.8 U	86.6 U	87.2 U	87.1 U	84.6 U	83.2 U
4-Nitroaniline	110 U	110 U	110 U	110 U	100 U	100 U
4,6-Dinitro-2-methylphenol	120 U	120 U	120 U	120 U	120 U	120 U
n-Nitrosodiphenylamine	52.6 U	52.5 U	52.8 U	52.7 U	51.3 U	50.4 U
4-Bromophenyl-phenylether	52.7 U	52.6 U	52.9 U	52.8 U	51.3 U	50.5 U
Hexachlorobenzene	52.9 U	52.8 U	53.2 U	53.1 U	51.6 U	50.7 U
Atrazine	78.2 U	78 U	78.5 U	78.4 U	76.2 U	74.9 U

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01
Lab sample ID No.:	L3837-11	L3837-12	L3837-13	L3837-16	L3837-17	L3837-18
Sample weight (g)	30.08	30.05	30.07	30.09	30.05	30.07
Percent Moisture	7.4	7.1	7.8	7.7	4.9	3.3
Dilution Factor	1	1	1	1	1	1
TAL SEMIVOLATILES - (ug/Kg)						
Pentachlorophenol	150 U	150 U	150 U	150 U	140 U	140 U
Phenanthrene	**94.4 J**	73 U	**110 J**	**86.6 J**	**190**	70.1 U
Anthracene	93.6 U	93.4 U	94.1 U	93.9 U	91.2 U	89.7 U
Carbazole	100 U	100 U	100 U	100 U	98.5 U	96.8 U
Di-n-butylphthalate	130 U	130 U	130 U	130 U	130 U	130 U
Fluoranthene	**220**	110 U	**230**	**180**	**240**	110 U
Pyrene	**160 J**	60.7 U	**170 J**	**170 J**	**200**	**82.3 J**
Butylbenzylphthalate	100 U	100 U	100 U	100 U	97.9 U	96.2 U
3,3-Dichlorobenzidine	82.8 U	82.6 U	83.2 U	83.1 U	80.7 U	79.3 U
Benzo(a)anthracene	**84.5 J**	59.8 U	**100 J**	**91 J**	**120 J**	57.4 U
Chrysene	**100 J**	61.8 U	**120 J**	**100 J**	**110 J**	59.3 U
Bis(2-ethylhexyl)phthalate	110 U	110 U	110 U	110 U	110 U	110 U
Di-n-octyl phthalate	120 U	120 U	120 U	120 U	120 U	120 U
Benzo(b)fluoranthene	**140 J**	71.7 U	**170 J**	**140 J**	**140 J**	68.9 U
Benzo(k)fluoranthene	58.2 U	58.1 U	58.5 U	58.4 U	56.7 U	55.8 U
Benzo(a)pyrene	**89.3 J**	67.4 U	**110 J**	**98.6 J**	**110 J**	64.7 U
Indeno(1,2,3-cd)pyrene	140 U	140 U	140 U	140 U	140 U	140 U
Dibenzo(a,h)anthracene	74.9 U	74.7 U	75.2 U	75.1 U	73 U	71.7 U
Benzo(g,h,i)perylene	63 U	62.8 U	**73.9 J**	**91.1 J**	**82.1 J**	60.3 U
1,2,4,5-Tetrachlorobenzene	68.4 U	68.2 U	68.7 U	68.6 U	66.6 U	65.5 U
1,4-Dioxane	71.3 U	71.1 U	71.6 U	71.5 U	69.5 U	68.3 U
2,3,4,6-Tetrachlorophenol	88.8 U	88.6 U	89.2 U	89 U	86.5 U	85 U

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-19	L3837-20
Sample weight (g)	30.04	30.06
Percent Moisture	3.8	7.7
Dilution Factor	1	1
TAL SEMIVOLATILES - (ug/Kg)		
Benzaldehyde	110 U	110 U
Phenol	52.8 U	55 U
bis(2-Chloroethyl)ether	40.5 U	42.2 U
2-Chlorophenol	47.3 U	49.3 U
2-Methylphenol	40.9 U	42.6 U
2,2-oxybis(1-Chloropropane)	61.1 U	63.7 U
Acetophenone	55.3 U	57.6 U
3+4-Methylphenols	64.9 U	67.6 U
n-Nitroso-di-n-propylamine	48.7 U	50.7 U
Hexachloroethane	59.1 U	61.6 U
Nitrobenzene	58.9 U	61.4 U
Isophorone	64.5 U	67.2 U
2-Nitrophenol	93.4 U	97.3 U
2,4-Dimethylphenol	71.3 U	74.2 U
bis(2-Chloroethoxy)methane	63.8 U	66.4 U
2,4-Dichlorophenol	63.6 U	66.2 U
Naphthalene	57.4 U	**95.8 J**
4-Chloroaniline	83.5 U	86.9 U
Hexachlorobutadiene	58.2 U	60.6 U
Caprolactam	160 U	170 U
4-Chloro-3-methylphenol	89.1 U	92.8 U
2-Methylnaphthalene	95.3 U	99.3 U
Hexachlorocyclopentadiene	190 U	190 U
2,4,6-Trichlorophenol	72 U	75 U
2,4,5-Trichlorophenol	73.8 U	76.8 U
1,1-Biphenyl	75.9 U	79 U
2-Chloronaphthalene	66.1 U	68.8 U
2-Nitroaniline	99.6 U	100 U
Dimethylphthalate	**170 J**	**180**
Acenaphthylene	70.8 U	73.8 U
2,6-Dinitrotoluene	65.7 U	68.5 U
3-Nitroaniline	86.4 U	90 U
Acenaphthene	70.5 U	73.4 U
2,4-Dinitrophenol	240 U	250 U
4-Nitrophenol	120 U	120 U
Dibenzofuran	71 U	73.9 U
2,4-Dinitrotoluene	110 U	110 U
Diethylphthalate	64.6 U	67.2 U
4-Chlorophenyl-phenylether	75.3 U	78.4 U
Fluorene	83.7 U	87.2 U
4-Nitroaniline	100 U	110 U
4,6-Dinitro-2-methylphenol	120 U	120 U
n-Nitrosodiphenylamine	50.7 U	52.8 U
4-Bromophenyl-phenylether	50.8 U	52.9 U
Hexachlorobenzene	51 U	53.1 U
Atrazine	75.3 U	78.5 U

TAL Semivolatiles Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-19	L3837-20
Sample weight (g)	30.04	30.06
Percent Moisture	3.8	7.7
Dilution Factor	1	1
TAL SEMIVOLATILES - (ug/Kg)		
Pentachlorophenol	140 U	150 U
Phenanthrene	70.5 U	**560**
Anthracene	90.2 U	**130 J**
Carbazole	97.4 U	**100 J**
Di-n-butylphthalate	130 U	130 U
Fluoranthene	110 U	**540**
Pyrene	58.7 U	**460**
Butylbenzylphthalate	96.8 U	100 U
3,3-Dichlorobenzidine	79.8 U	83.1 U
Benzo(a)anthracene	57.8 U	**260**
Chrysene	59.7 U	**220**
Bis(2-ethylhexyl)phthalate	110 U	110 U
Di-n-octyl phthalate	120 U	120 U
Benzo(b)fluoranthene	69.3 U	**230**
Benzo(k)fluoranthene	56.1 U	**80.4 J**
Benzo(a)pyrene	65.1 U	**170 J**
Indeno(1,2,3-cd)pyrene	140 U	140 U
Dibenzo(a,h)anthracene	72.2 U	75.2 U
Benzo(g,h,i)perylene	60.7 U	**110 J**
1,2,4,5-Tetrachlorobenzene	65.9 U	68.6 U
1,4-Dioxane	68.7 U	71.5 U
2,3,4,6-Tetrachlorophenol	85.6 U	89.1 U

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

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Cover Page

Order ID : L3837

Project ID : RFP 631

Client : Weston Solutions, Inc.

Lab Sample Number	Client Sample Number
L3837-01	789UMR-DSP01-01
L3837-02	789UMR-DSP01-01MS
L3837-03	789UMR-DSP01-01MSD
L3837-04	789UMR-DSP01-02
L3837-05	789UMR-DSP02-01
L3837-06	789UMR-TP05-0612-01
L3837-07	789UMR-TP05-1218-01
L3837-08	789UMR-TP05-1824-01
L3837-09	789UMR-TP05-3036-01
L3837-10	789UMR-TP06-0006-01
L3837-11	789UMR-TP07-1218-01
L3837-12	789UMR-TP08-1824-01
L3837-13	789UMR-TP11-0006-01
L3837-14	789UMR-TP11-0006-01MS
L3837-15	789UMR-TP11-0006-01MSD
L3837-16	789UMR-TP11-0006-02
L3837-17	789UMR-TP11-0612-01
L3837-18	789UMR-TP11-2430-01
L3837-19	789UMR-TP12-0002-01
L3837-20	789UMR-TP13-0612-01

I certify that the 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. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : N. N. Pandya

APPROVED
Date: 9/11/2020
By Nimisha Pandya, QA/QC Supervisor at 9:51 am, Sep 15, 2020

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: SVOC-TCL BNA -20

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for SVOC-TCL BNA -20.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column DB-UI 8270D which is 20 meters, 0.18 mm ID, 0.36 um dfThe samples were analyzed on instrument BNA_P using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGAThe analysis of SVOC-TCL BNA -20 was based on method 8270D and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds .
The MSD recoveries met the acceptable requirements .
The RPD met criteria .
The Blank Spike met requirements for all samples .

The Blank analysis did not indicate the presence of lab contamination.

The %RSD is greater than 20% in the Initial Calibration (Method 8270-BF082720.M) for 2-Nitroaniline,2,6-Dinitrotoluene,3-Nitroaniline,4-Nitrophenol,2,4-Dinitrotoluene,4-Nitroaniline these compounds are passing on LR and Benzaldehyde,2-Nitrophenol,2,4-Dinitrophenol,4,6-Dinitro-2-methylphenol these compounds are passing on QR.
The %RSD is greater than 15% in the Initial Calibration (Method 8270-BP082420.M) for Benzoic acid, 2,4-Dinitrophenol these compounds are passing on LR. The Continuous Calibration File ID BF121473.D met the requirements except for 2,4-Dinitrophenol and 2-Nitrophenol .

The Tuning criteria met requirements.

E. Additional Comments:
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.
Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

Concentration of SOIL Sample:

Concentration ug/Kg,
(dry weight basis) = $\frac{(Ax)\ (Is)\ (Vt)\ (DF)\ (GPC)}{(Ais)\ (\overline{RRF})\ \ (Vi)\ (Wt)\ (D)}$

Where,
Ax = Area of the characteristic ion for the compound to be measured.
Ais = Area of the characteristic ion for the internal standard.
Is = Amount of internal standard injected in ng.
Vi = Volume of extract injected in microliters (uL)
Vt = Volume of concentrated extract in microliters (uL)
Wt = Weight of the original sample extracted in g
Df = Dilution factor

$\overline{RRF}$ = Mean Relative Response Factor determined from the initial calibration standard.
GPC = $\frac{Vin}{Vout}$ = GPC factor (If no GPC is performed, GPC=1)
Vout = Volume of extract collected after GPC cleanup.

D = % dry weight or $\frac{100 - \%Moisture}{100}$

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

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2.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:51 am, Sep 15, 2020

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DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following " Results Qualifiers" are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers **"P"** for ICP instrument **"PM"** for ICP when Microwave Digestion is used **"CV"** for Manual Cold Vapor AA **"AV"** for automated Cold Vapor AA **"CA"** for MIDI-Distillation Spectrophotometric **"AS"** for Semi -Automated Spectrophotometric **"C"** for Manual Spectrophotometric **"T"** for Titrimetric **"NR"** for analyte not required to be analyzed
OR	Indicates the analyte's concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

QA Control # A3040961

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DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following " Results Qualifiers" are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: (1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.) (2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This is flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as "12 B".
E	Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

QA Control # A3040960

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APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: L3837

	Completed
For thorough review, the report must have the following:	
GENERAL:	
Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)	✓
Check chain-of-custody for proper relinquish/return of samples	✓
Is the chain of custody signed and complete	✓
Check internal chain-of-custody for proper relinquish/return of samples /sample extracts	✓
Collect information for each project id from server. Were all requirements followed	✓
COVER PAGE:	
Do numbers of samples correspond to the number of samples in the Chain of Custody on login page	✓
Do lab numbers and client Ids on cover page agree with the Chain of Custody	✓
CHAIN OF CUSTODY:	
Do requested analyses on Chain of Custody agree with form I results	✓
Do requested analyses on Chain of Custody agree with the log-in page	✓
Were the correct method log-in for analysis according to the Analytical Request and Chain of Castody	✓
Were the samples received within hold time	✓
Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle	✓
ANALYTICAL:	
Was method requirement followed?	✓
Was client requirement followed?	✓
Does the case narrative summarize all QC failure?	✓
All runlogs and manual integration are reviewed for requirements	✓
All manual calculations and /or hand notations verified	✓

1st Level QA Review Signature: APARNA SONI **Date:** 09/15/2020

2nd Level QA Review Signature: N. N. Pandya **Date:**

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:55 am, Sep 15, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.4
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121468.D	1	08/28/20 13:40	08/28/20 19:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	350	ug/Kg
108-95-2	Phenol	53.7	U	53.7	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	41.2	U	41.2	180	ug/Kg
95-57-8	2-Chlorophenol	48.1	U	48.1	180	ug/Kg
95-48-7	2-Methylphenol	41.6	U	41.6	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	62.1	U	62.1	180	ug/Kg
98-86-2	Acetophenone	56.3	U	56.3	180	ug/Kg
65794-96-9	3+4-Methylphenols	66.0	U	66.0	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	49.5	U	49.5	180	ug/Kg
67-72-1	Hexachloroethane	60.1	U	60.1	180	ug/Kg
98-95-3	Nitrobenzene	59.9	U	59.9	180	ug/Kg
78-59-1	Isophorone	65.6	U	65.6	180	ug/Kg
88-75-5	2-Nitrophenol	95.0	U	95.0	180	ug/Kg
105-67-9	2,4-Dimethylphenol	72.5	U	72.5	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	64.8	U	64.8	180	ug/Kg
120-83-2	2,4-Dichlorophenol	64.6	U	64.6	180	ug/Kg
91-20-3	Naphthalene	58.3	U	58.3	180	ug/Kg
106-47-8	4-Chloroaniline	84.9	U	84.9	180	ug/Kg
87-68-3	Hexachlorobutadiene	59.1	U	59.1	180	ug/Kg
105-60-2	Caprolactam	160	U	160	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	90.6	U	90.6	180	ug/Kg
91-57-6	2-Methylnaphthalene	96.9	U	96.9	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	73.2	U	73.2	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	75.0	U	75.0	180	ug/Kg
92-52-4	1,1-Biphenyl	77.1	U	77.1	180	ug/Kg
91-58-7	2-Chloronaphthalene	67.2	U	67.2	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	140	J	55.2	180	ug/Kg
208-96-8	Acenaphthylene	72.0	U	72.0	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	66.8	U	66.8	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.4
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121468.D	1	08/28/20 13:40	08/28/20 19:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	87.8	U	87.8	180	ug/Kg
83-32-9	Acenaphthene	71.7	U	71.7	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	350	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	350	ug/Kg
132-64-9	Dibenzofuran	72.1	U	72.1	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	65.6	U	65.6	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	76.5	U	76.5	180	ug/Kg
86-73-7	Fluorene	85.1	U	85.1	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	51.5	U	51.5	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	51.6	U	51.6	180	ug/Kg
118-74-1	Hexachlorobenzene	51.8	U	51.8	180	ug/Kg
1912-24-9	Atrazine	76.6	U	76.6	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	350	ug/Kg
85-01-8	Phenanthrene	150	J	71.7	180	ug/Kg
120-12-7	Anthracene	91.7	U	91.7	180	ug/Kg
86-74-8	Carbazole	99.0	U	99.0	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	270		110	180	ug/Kg
129-00-0	Pyrene	290		59.6	180	ug/Kg
85-68-7	Butylbenzylphthalate	98.4	U	98.4	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	81.2	U	81.2	180	ug/Kg
56-55-3	Benzo(a)anthracene	180		58.7	180	ug/Kg
218-01-9	Chrysene	170	J	60.7	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	180		70.5	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	57.0	U	57.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	140	J	66.2	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	350	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	73.4	U	73.4	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.4
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121468.D	1	08/28/20 13:40	08/28/20 19:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	100	J	61.7	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	67.0	U	67.0	180	ug/Kg
123-91-1	1,4-Dioxane	69.8	U	69.8	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	87.0	U	87.0	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	75.2		28 - 127	50%	SPK: 150
13127-88-3	Phenol-d6	71.6		34 - 127	48%	SPK: 150
4165-60-0	Nitrobenzene-d5	67.0		31 - 132	67%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.6		39 - 123	56%	SPK: 100
118-79-6	2,4,6-Tribromophenol	84.2		30 - 133	56%	SPK: 150
1718-51-0	Terphenyl-d14	57.0		37 - 115	57%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	323000	6.86			
1146-65-2	Naphthalene-d8	1260000	8.14			
15067-26-2	Acenaphthene-d10	655000	9.9			
1517-22-2	Phenanthrene-d10	1240000	11.38			
1719-03-5	Chrysene-d12	841000	14.02			
1520-96-3	Perylene-d12	774000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~880~~	~~JB~~		~~2.15~~ R	ug/Kg
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	240	A		5.07 J	ug/Kg
000057-10-3	n-Hexadecanoic acid	170	J N		11.9	ug/Kg
~~000629-94-7~~	~~Heneicosane~~ Unknown	71.4	J		12.5	ug/Kg
074685-30-6	5-Eicosene, (E)-	420	J N		13.9	ug/Kg
000295-65-8	Cyclohexadecane	120	J N		14.5	ug/Kg
000629-92-5	Nonadecane	110	J N		14.8	ug/Kg
~~125529-10-4~~	~~7,11-Dimethyldodeca-2,6,10-trien-1~~ Unknown	84.1	J		14.9	ug/Kg
000638-66-4	Octadecanal	230	J N		15.0	ug/Kg
000297-03-0	Cyclotetracosane	370	J N		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	130	J N		15.4	ug/Kg
001560-92-5	Hexadecane, 2-methyl-	96.7	J N		16.0	ug/Kg
002004-39-9	1-Heptacosanol	180	J N		16.0	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	5.4
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121468.D	1	08/28/20 13:40	08/28/20 19:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
	unknown16.77	73.2	J		16.8	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121467.D	1	08/28/20 13:40	08/28/20 19:01	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	350	ug/Kg
108-95-2	Phenol	54.5	U	54.5	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	41.9	U	41.9	180	ug/Kg
95-57-8	2-Chlorophenol	48.9	U	48.9	180	ug/Kg
95-48-7	2-Methylphenol	42.3	U	42.3	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.2	U	63.2	180	ug/Kg
98-86-2	Acetophenone	57.2	U	57.2	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.1	U	67.1	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.3	U	50.3	180	ug/Kg
67-72-1	Hexachloroethane	61.1	U	61.1	180	ug/Kg
98-95-3	Nitrobenzene	60.9	U	60.9	180	ug/Kg
78-59-1	Isophorone	66.7	U	66.7	180	ug/Kg
88-75-5	2-Nitrophenol	96.6	U	96.6	180	ug/Kg
105-67-9	2,4-Dimethylphenol	73.7	U	73.7	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	65.9	U	65.9	180	ug/Kg
120-83-2	2,4-Dichlorophenol	65.7	U	65.7	180	ug/Kg
91-20-3	Naphthalene	59.3	U	59.3	180	ug/Kg
106-47-8	4-Chloroaniline	86.3	U	86.3	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.1	U	60.1	180	ug/Kg
105-60-2	Caprolactam	160	U	160	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.1	U	92.1	180	ug/Kg
91-57-6	2-Methylnaphthalene	98.5	U	98.5	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	74.4	U	74.4	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.2	U	76.2	180	ug/Kg
92-52-4	1,1-Biphenyl	78.4	U	78.4	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.3	U	68.3	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	120	J	56.1	180	ug/Kg
208-96-8	Acenaphthylene	73.2	U	73.2	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	67.9	U	67.9	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121467.D	1	08/28/20 13:40	08/28/20 19:01	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	89.3	U	89.3	180	ug/Kg
83-32-9	Acenaphthene	72.9	U	72.9	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	350	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	350	ug/Kg
132-64-9	Dibenzofuran	73.3	U	73.3	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	66.7	U	66.7	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	77.8	U	77.8	180	ug/Kg
86-73-7	Fluorene	86.5	U	86.5	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.4	U	52.4	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.5	U	52.5	180	ug/Kg
118-74-1	Hexachlorobenzene	52.7	U	52.7	180	ug/Kg
1912-24-9	Atrazine	77.8	U	77.8	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	350	ug/Kg
85-01-8	Phenanthrene	120	J	72.9	180	ug/Kg
120-12-7	Anthracene	93.2	U	93.2	180	ug/Kg
86-74-8	Carbazole	100	U	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	260		110	180	ug/Kg
129-00-0	Pyrene	280		60.6	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	82.5	U	82.5	180	ug/Kg
56-55-3	Benzo(a)anthracene	190		59.7	180	ug/Kg
218-01-9	Chrysene	160	J	61.7	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	190		71.6	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	58.0	U	58.0	180	ug/Kg
50-32-8	Benzo(a)pyrene	150	J	67.3	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	350	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	74.6	U	74.6	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121467.D	1	08/28/20 13:40	08/28/20 19:01	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	110	J	62.7	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.1	U	68.1	180	ug/Kg
123-91-1	1,4-Dioxane	71.0	U	71.0	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	88.4	U	88.4	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	75.7		28 - 127	50%	SPK: 150
13127-88-3	Phenol-d6	72.3		34 - 127	48%	SPK: 150
4165-60-0	Nitrobenzene-d5	68.1		31 - 132	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	56.7		39 - 123	57%	SPK: 100
118-79-6	2,4,6-Tribromophenol	84.0		30 - 133	56%	SPK: 150
1718-51-0	Terphenyl-d14	56.6		37 - 115	57%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	312000	6.86			
1146-65-2	Naphthalene-d8	1230000	8.14			
15067-26-2	Acenaphthene-d10	641000	9.9			
1517-22-2	Phenanthrene-d10	1210000	11.38			
1719-03-5	Chrysene-d12	862000	14.02			
1520-96-3	Perylene-d12	780000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~810~~	~~JB~~		~~2.16~~ R	ug/Kg
000123-42-2	2-Pentanone, 4-hydroxy-4-methyl-	280	A		5.07 J	ug/Kg
000481-39-0	Juglone	520	J		10.0	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	110	J		11.9	ug/Kg
000661-19-8	Behenic alcohol	310	J		13.9	ug/Kg
000112-88-9	1-Octadecene	110	J		14.5	ug/Kg
000301-02-0	9-Octadecenamide, (Z)-	100	J		14.8	ug/Kg
007390-81-0	Oxirane, hexadecyl-	190	J		14.9	ug/Kg
015594-90-8	1-Heneicosanol	310	J		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	130	J		15.4	ug/Kg
000629-94-7	Heneicosane	93.7	J		16.0	ug/Kg
000295-48-7	Cyclopentadecane	110	J		16.0	ug/Kg
000083-47-6	.gamma.-Sitosterol	80.1	J		17.6	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121467.D	1	08/28/20 13:40	08/28/20 19:01	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003161.D	1	08/28/20 13:40	08/28/20 21:06	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	350	ug/Kg
108-95-2	Phenol	53.9	U	53.9	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	41.4	U	41.4	180	ug/Kg
95-57-8	2-Chlorophenol	48.3	U	48.3	180	ug/Kg
95-48-7	2-Methylphenol	41.8	U	41.8	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	62.5	U	62.5	180	ug/Kg
98-86-2	Acetophenone	56.5	U	56.5	180	ug/Kg
65794-96-9	3+4-Methylphenols	66.3	U	66.3	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	49.7	U	49.7	180	ug/Kg
67-72-1	Hexachloroethane	60.4	U	60.4	180	ug/Kg
98-95-3	Nitrobenzene	60.2	U	60.2	180	ug/Kg
78-59-1	Isophorone	65.9	U	65.9	180	ug/Kg
88-75-5	2-Nitrophenol	95.5	U	95.5	180	ug/Kg
105-67-9	2,4-Dimethylphenol	72.8	U	72.8	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	65.2	U	65.2	180	ug/Kg
120-83-2	2,4-Dichlorophenol	65.0	U	65.0	180	ug/Kg
91-20-3	Naphthalene	58.6	U	58.6	180	ug/Kg
106-47-8	4-Chloroaniline	85.3	U	85.3	180	ug/Kg
87-68-3	Hexachlorobutadiene	59.4	U	59.4	180	ug/Kg
105-60-2	Caprolactam	160	U	160	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	91.0	U	91.0	180	ug/Kg
91-57-6	2-Methylnaphthalene	97.4	U	97.4	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	73.5	U	73.5	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	75.4	U	75.4	180	ug/Kg
92-52-4	1,1-Biphenyl	77.5	U	77.5	180	ug/Kg
91-58-7	2-Chloronaphthalene	67.5	U	67.5	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	78.6	J	55.4	180	ug/Kg
208-96-8	Acenaphthylene	72.4	U	72.4	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	67.1	U	67.1	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003161.D	1	08/28/20 13:40	08/28/20 21:06	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	88.3	U	88.3	180	ug/Kg
83-32-9	Acenaphthene	72.0	U	72.0	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	350	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	350	ug/Kg
132-64-9	Dibenzofuran	72.5	U	72.5	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	66.0	U	66.0	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	76.9	U	76.9	180	ug/Kg
86-73-7	Fluorene	85.5	U	85.5	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	51.8	U	51.8	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	51.9	U	51.9	180	ug/Kg
118-74-1	Hexachlorobenzene	52.1	U	52.1	180	ug/Kg
1912-24-9	Atrazine	77.0	U	77.0	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	350	ug/Kg
85-01-8	Phenanthrene	72.1	U	72.1	180	ug/Kg
120-12-7	Anthracene	92.2	U	92.2	180	ug/Kg
86-74-8	Carbazole	99.5	U	99.5	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	110	U	110	180	ug/Kg
129-00-0	Pyrene	59.9	U	59.9	180	ug/Kg
85-68-7	Butylbenzylphthalate	98.9	U	98.9	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	81.6	U	81.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	59.0	U	59.0	180	ug/Kg
218-01-9	Chrysene	61.0	U	61.0	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	70.8	U	70.8	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	57.3	U	57.3	180	ug/Kg
50-32-8	Benzo(a)pyrene	66.5	U	66.5	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	350	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	73.8	U	73.8	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	6
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003161.D	1	08/28/20 13:40	08/28/20 21:06	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	62.0	U	62.0	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	67.3	U	67.3	180	ug/Kg
123-91-1	1,4-Dioxane	70.2	U	70.2	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	87.4	U	87.4	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	70.3		28 - 127	47%	SPK: 150
13127-88-3	Phenol-d6	67.3		34 - 127	45%	SPK: 150
4165-60-0	Nitrobenzene-d5	49.9		31 - 132	50%	SPK: 100
321-60-8	2-Fluorobiphenyl	49.1		39 - 123	49%	SPK: 100
118-79-6	2,4,6-Tribromophenol	71.4		30 - 133	48%	SPK: 150
1718-51-0	Terphenyl-d14	47.0		37 - 115	47%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	252000	7.66			
1146-65-2	Naphthalene-d8	1020000	10.44			
15067-26-2	Acenaphthene-d10	625000	14.3			
1517-22-2	Phenanthrene-d10	1360000	17.05			
1719-03-5	Chrysene-d12	1460000	21.15			
1520-96-3	Perylene-d12	1390000	23.38			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~570~~	~~JB~~		~~2.93~~ R	ug/Kg
1000130-97-9	E-15-Heptadecenal	210	J N		20.9	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.3
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121470.D	1	08/28/20 13:40	08/28/20 20:34	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	340	ug/Kg
108-95-2	Phenol	53.0	U	53.0	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	40.7	U	40.7	180	ug/Kg
95-57-8	2-Chlorophenol	47.5	U	47.5	180	ug/Kg
95-48-7	2-Methylphenol	41.1	U	41.1	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	61.4	U	61.4	180	ug/Kg
98-86-2	Acetophenone	55.6	U	55.6	180	ug/Kg
65794-96-9	3+4-Methylphenols	65.2	U	65.2	340	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	48.9	U	48.9	180	ug/Kg
67-72-1	Hexachloroethane	59.4	U	59.4	180	ug/Kg
98-95-3	Nitrobenzene	59.2	U	59.2	180	ug/Kg
78-59-1	Isophorone	64.8	U	64.8	180	ug/Kg
88-75-5	2-Nitrophenol	93.9	U	93.9	180	ug/Kg
105-67-9	2,4-Dimethylphenol	71.6	U	71.6	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	64.1	U	64.1	180	ug/Kg
120-83-2	2,4-Dichlorophenol	63.9	U	63.9	180	ug/Kg
91-20-3	Naphthalene	57.6	U	57.6	180	ug/Kg
106-47-8	4-Chloroaniline	83.9	U	83.9	180	ug/Kg
87-68-3	Hexachlorobutadiene	58.4	U	58.4	180	ug/Kg
105-60-2	Caprolactam	160	U	160	340	ug/Kg
59-50-7	4-Chloro-3-methylphenol	89.5	U	89.5	180	ug/Kg
91-57-6	2-Methylnaphthalene	95.7	U	95.7	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	340	ug/Kg
88-06-2	2,4,6-Trichlorophenol	72.3	U	72.3	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	74.1	U	74.1	180	ug/Kg
92-52-4	1,1-Biphenyl	76.2	U	76.2	180	ug/Kg
91-58-7	2-Chloronaphthalene	66.4	U	66.4	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	99.9	J	54.5	180	ug/Kg
208-96-8	Acenaphthylene	71.1	U	71.1	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	66.0	U	66.0	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.3
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121470.D	1	08/28/20 13:40	08/28/20 20:34	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	86.8	U	86.8	180	ug/Kg
83-32-9	Acenaphthene	70.8	U	70.8	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	340	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	340	ug/Kg
132-64-9	Dibenzofuran	71.3	U	71.3	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	64.9	U	64.9	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	75.6	U	75.6	180	ug/Kg
86-73-7	Fluorene	84.1	U	84.1	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	340	ug/Kg
86-30-6	n-Nitrosodiphenylamine	50.9	U	50.9	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	51.0	U	51.0	180	ug/Kg
118-74-1	Hexachlorobenzene	51.2	U	51.2	180	ug/Kg
1912-24-9	Atrazine	75.7	U	75.7	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	340	ug/Kg
85-01-8	Phenanthrene	70.8	U	70.8	180	ug/Kg
120-12-7	Anthracene	90.6	U	90.6	180	ug/Kg
86-74-8	Carbazole	97.9	U	97.9	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	110	U	110	180	ug/Kg
129-00-0	Pyrene	58.9	U	58.9	180	ug/Kg
85-68-7	Butylbenzylphthalate	97.2	U	97.2	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	80.2	U	80.2	180	ug/Kg
56-55-3	Benzo(a)anthracene	58.0	U	58.0	180	ug/Kg
218-01-9	Chrysene	60.0	U	60.0	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	340	ug/Kg
205-99-2	Benzo(b)fluoranthene	69.6	U	69.6	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	56.4	U	56.4	180	ug/Kg
50-32-8	Benzo(a)pyrene	65.4	U	65.4	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	340	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	72.5	U	72.5	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.3
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121470.D	1	08/28/20 13:40	08/28/20 20:34	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	61.0	U	61.0	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	66.2	U	66.2	180	ug/Kg
123-91-1	1,4-Dioxane	69.0	U	69.0	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	86.0	U	86.0	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	74.5		28 - 127	50%	SPK: 150
13127-88-3	Phenol-d6	71.8		34 - 127	48%	SPK: 150
4165-60-0	Nitrobenzene-d5	70.1		31 - 132	70%	SPK: 100
321-60-8	2-Fluorobiphenyl	57.3		39 - 123	57%	SPK: 100
118-79-6	2,4,6-Tribromophenol	70.6		30 - 133	47%	SPK: 150
1718-51-0	Terphenyl-d14	57.1		37 - 115	57%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	314000	6.86			
1146-65-2	Naphthalene-d8	1210000	8.14			
15067-26-2	Acenaphthene-d10	641000	9.9			
1517-22-2	Phenanthrene-d10	1200000	11.38			
1719-03-5	Chrysene-d12	851000	14.02			
1520-96-3	Perylene-d12	769000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~920~~	~~JB~~		~~2.16~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	130	J N		11.9	ug/Kg
074685-30-6	5-Eicosene, (E)-	420	J N		13.9	ug/Kg
000301-02-0	9-Octadecenamide, (Z)-	110	J N		14.8	ug/Kg
002004-39-9	1-Heptacosanol	98.7	J N		16.0	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121471.D	1	08/28/20 13:40	08/28/20 21:05	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	120	U	120	380	ug/Kg
108-95-2	Phenol	59.0	U	59.0	200	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	45.3	U	45.3	200	ug/Kg
95-57-8	2-Chlorophenol	52.8	U	52.8	200	ug/Kg
95-48-7	2-Methylphenol	45.7	U	45.7	200	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	68.3	U	68.3	200	ug/Kg
98-86-2	Acetophenone	61.8	U	61.8	200	ug/Kg
65794-96-9	3+4-Methylphenols	72.5	U	72.5	380	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	54.4	U	54.4	200	ug/Kg
67-72-1	Hexachloroethane	66.0	U	66.0	200	ug/Kg
98-95-3	Nitrobenzene	65.9	U	65.9	200	ug/Kg
78-59-1	Isophorone	72.1	U	72.1	200	ug/Kg
88-75-5	2-Nitrophenol	100	U	100	200	ug/Kg
105-67-9	2,4-Dimethylphenol	79.6	U	79.6	200	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	71.3	U	71.3	200	ug/Kg
120-83-2	2,4-Dichlorophenol	71.1	U	71.1	200	ug/Kg
91-20-3	Naphthalene	64.1	U	64.1	200	ug/Kg
106-47-8	4-Chloroaniline	93.3	U	93.3	200	ug/Kg
87-68-3	Hexachlorobutadiene	65.0	U	65.0	200	ug/Kg
105-60-2	Caprolactam	180	U	180	380	ug/Kg
59-50-7	4-Chloro-3-methylphenol	99.5	U	99.5	200	ug/Kg
91-57-6	2-Methylnaphthalene	110	U	110	200	ug/Kg
77-47-4	Hexachlorocyclopentadiene	210	U	210	380	ug/Kg
88-06-2	2,4,6-Trichlorophenol	80.4	U	80.4	200	ug/Kg
95-95-4	2,4,5-Trichlorophenol	82.4	U	82.4	200	ug/Kg
92-52-4	1,1-Biphenyl	84.8	U	84.8	200	ug/Kg
91-58-7	2-Chloronaphthalene	73.8	U	73.8	200	ug/Kg
88-74-4	2-Nitroaniline	110	U	110	200	ug/Kg
131-11-3	Dimethylphthalate	180	J	60.6	200	ug/Kg
208-96-8	Acenaphthylene	79.1	U	79.1	200	ug/Kg
606-20-2	2,6-Dinitrotoluene	73.4	U	73.4	200	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121471.D	1	08/28/20 13:40	08/28/20 21:05	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	96.5	U	96.5	200	ug/Kg
83-32-9	Acenaphthene	78.8	U	78.8	200	ug/Kg
51-28-5	2,4-Dinitrophenol	260	U	260	380	ug/Kg
100-02-7	4-Nitrophenol	130	U	130	380	ug/Kg
132-64-9	Dibenzofuran	79.3	U	79.3	200	ug/Kg
121-14-2	2,4-Dinitrotoluene	120	U	120	200	ug/Kg
84-66-2	Diethylphthalate	72.1	U	72.1	200	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	84.1	U	84.1	200	ug/Kg
86-73-7	Fluorene	93.5	U	93.5	200	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	200	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	130	U	130	380	ug/Kg
86-30-6	n-Nitrosodiphenylamine	56.6	U	56.6	200	ug/Kg
101-55-3	4-Bromophenyl-phenylether	56.7	U	56.7	200	ug/Kg
118-74-1	Hexachlorobenzene	57.0	U	57.0	200	ug/Kg
1912-24-9	Atrazine	84.2	U	84.2	200	ug/Kg
87-86-5	Pentachlorophenol	160	U	160	380	ug/Kg
85-01-8	Phenanthrene	220		78.8	200	ug/Kg
120-12-7	Anthracene	100	U	100	200	ug/Kg
86-74-8	Carbazole	110	U	110	200	ug/Kg
84-74-2	Di-n-butylphthalate	140	U	140	200	ug/Kg
206-44-0	Fluoranthene	490		120	200	ug/Kg
129-00-0	Pyrene	470		65.5	200	ug/Kg
85-68-7	Butylbenzylphthalate	110	U	110	200	ug/Kg
91-94-1	3,3-Dichlorobenzidine	89.2	U	89.2	200	ug/Kg
56-55-3	Benzo(a)anthracene	220		64.5	200	ug/Kg
218-01-9	Chrysene	260		66.7	200	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	120	U	120	200	ug/Kg
117-84-0	Di-n-octyl phthalate	130	U	130	380	ug/Kg
205-99-2	Benzo(b)fluoranthene	330		77.4	200	ug/Kg
207-08-9	Benzo(k)fluoranthene	120	J	62.7	200	ug/Kg
50-32-8	Benzo(a)pyrene	240		72.8	200	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	170	J	150	380	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	80.7	U	80.7	200	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121471.D	1	08/28/20 13:40	08/28/20 21:05	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	210		67.8	200	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	73.6	U	73.6	200	ug/Kg
123-91-1	1,4-Dioxane	76.7	U	76.7	200	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	95.6	U	95.6	200	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	82.3		28 - 127	55%	SPK: 150
13127-88-3	Phenol-d6	76.9		34 - 127	51%	SPK: 150
4165-60-0	Nitrobenzene-d5	71.1		31 - 132	71%	SPK: 100
321-60-8	2-Fluorobiphenyl	57.8		39 - 123	58%	SPK: 100
118-79-6	2,4,6-Tribromophenol	90.9		30 - 133	61%	SPK: 150
1718-51-0	Terphenyl-d14	58.3		37 - 115	58%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	312000	6.86			
1146-65-2	Naphthalene-d8	1230000	8.14			
15067-26-2	Acenaphthene-d10	628000	9.9			
1517-22-2	Phenanthrene-d10	1160000	11.38			
1719-03-5	Chrysene-d12	764000	14.02			
1520-96-3	Perylene-d12	717000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~1200~~	~~JB~~		~~2.17~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	410	J N		11.9	ug/Kg
000057-11-4	Octadecanoic acid	120	J N		12.7	ug/Kg
074685-30-6	5-Eicosene, (E)-	460	J N		13.9	ug/Kg
1000351-76-3	Nonadecyl trifluoroacetate	340	J N		14.5	ug/Kg
000111-02-4	Squalene	100	J N		14.9	ug/Kg
000638-66-4	Octadecanal	420	J N		15.0	ug/Kg
000557-61-9	Octacosanol	990	J N		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	200	J N		15.4	ug/Kg
1000376-70-0	Heptadecanal	260	J N		15.7	ug/Kg
000629-94-7	Heneicosane	290	J N		16.0	ug/Kg
000506-51-4	n-Tetracosanol-1	250	J N		16.0	ug/Kg
007390-81-0	Oxirane, hexadecyl-	260	J N		16.8	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	13.9
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121471.D	1	08/28/20 13:40	08/28/20 21:05	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000629-92-5	Nonadecane	140	J N		17.1	ug/Kg
000083-47-6	.gamma.-Sitosterol	390	J N		17.6	ug/Kg
	unknown18.17	560	J		18.2	ug/Kg
000560-32-7	1H-3a,7-Methanoazulene, 2,3,6,7,8, Unknown	800	J		18.5	ug/Kg
072540-93-3	2-Methyl-2-bornene Unknown	300	J		18.9	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003160.D	1	08/28/20 13:40	08/28/20 20:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	360	ug/Kg
108-95-2	Phenol	54.8	U	54.8	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	42.1	U	42.1	180	ug/Kg
95-57-8	2-Chlorophenol	49.1	U	49.1	180	ug/Kg
95-48-7	2-Methylphenol	42.5	U	42.5	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.4	U	63.4	180	ug/Kg
98-86-2	Acetophenone	57.4	U	57.4	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.3	U	67.3	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.5	U	50.5	180	ug/Kg
67-72-1	Hexachloroethane	61.3	U	61.3	180	ug/Kg
98-95-3	Nitrobenzene	61.1	U	61.1	180	ug/Kg
78-59-1	Isophorone	66.9	U	66.9	180	ug/Kg
88-75-5	2-Nitrophenol	96.9	U	96.9	180	ug/Kg
105-67-9	2,4-Dimethylphenol	73.9	U	73.9	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	66.2	U	66.2	180	ug/Kg
120-83-2	2,4-Dichlorophenol	66.0	U	66.0	180	ug/Kg
91-20-3	Naphthalene	59.5	U	59.5	180	ug/Kg
106-47-8	4-Chloroaniline	86.6	U	86.6	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.3	U	60.3	180	ug/Kg
105-60-2	Caprolactam	170	U	170	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.4	U	92.4	180	ug/Kg
91-57-6	2-Methylnaphthalene	98.9	U	98.9	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	74.7	U	74.7	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.5	U	76.5	180	ug/Kg
92-52-4	1,1-Biphenyl	78.7	U	78.7	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.6	U	68.6	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	150	J	56.3	180	ug/Kg
208-96-8	Acenaphthylene	73.5	U	73.5	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	68.2	U	68.2	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003160.D	1	08/28/20 13:40	08/28/20 20:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	89.6	U	89.6	180	ug/Kg
83-32-9	Acenaphthene	73.2	U	73.2	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	360	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	360	ug/Kg
132-64-9	Dibenzofuran	73.6	U	73.6	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	67.0	U	67.0	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	78.1	U	78.1	180	ug/Kg
86-73-7	Fluorene	86.8	U	86.8	180	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.6	U	52.6	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.7	U	52.7	180	ug/Kg
118-74-1	Hexachlorobenzene	52.9	U	52.9	180	ug/Kg
1912-24-9	Atrazine	78.2	U	78.2	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	360	ug/Kg
85-01-8	Phenanthrene	94.4	J	73.2	180	ug/Kg
120-12-7	Anthracene	93.6	U	93.6	180	ug/Kg
86-74-8	Carbazole	100	U	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	220		110	180	ug/Kg
129-00-0	Pyrene	160	J	60.9	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	82.8	U	82.8	180	ug/Kg
56-55-3	Benzo(a)anthracene	84.5	J	59.9	180	ug/Kg
218-01-9	Chrysene	100	J	61.9	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	140	J	71.9	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	58.2	U	58.2	180	ug/Kg
50-32-8	Benzo(a)pyrene	89.3	J	67.6	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	360	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	74.9	U	74.9	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.4
Sample Wt/Vol:	30.08 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003160.D	1	08/28/20 13:40	08/28/20 20:32	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	63.0	U	63.0	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.4	U	68.4	180	ug/Kg
123-91-1	1,4-Dioxane	71.3	U	71.3	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	88.8	U	88.8	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	78.7		28 - 127	52%	SPK: 150
13127-88-3	Phenol-d6	75.0		34 - 127	50%	SPK: 150
4165-60-0	Nitrobenzene-d5	56.5		31 - 132	56%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.8		39 - 123	56%	SPK: 100
118-79-6	2,4,6-Tribromophenol	79.8		30 - 133	53%	SPK: 150
1718-51-0	Terphenyl-d14	53.3		37 - 115	53%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	251000	7.66			
1146-65-2	Naphthalene-d8	1010000	10.44			
15067-26-2	Acenaphthene-d10	621000	14.3			
1517-22-2	Phenanthrene-d10	1350000	17.05			
1719-03-5	Chrysene-d12	1420000	21.15			
1520-96-3	Perylene-d12	1320000	23.38			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~580~~	~~JB~~		~~2.93~~ R	ug/Kg
~~000123-42-2~~	~~2-Pentanone, 4-hydroxy-4-methyl-~~ unknown	~~110~~	~~A~~		~~4.80~~ J	ug/Kg
000295-65-8	Cyclohexadecane	160	J N		20.9	ug/Kg
000192-97-2	Benzo[e]pyrene	77.2	J N		23.2	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.1
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003159.D	1	08/28/20 13:40	08/28/20 19:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	350	ug/Kg
108-95-2	Phenol	54.6	U	54.6	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	42.0	U	42.0	180	ug/Kg
95-57-8	2-Chlorophenol	49.0	U	49.0	180	ug/Kg
95-48-7	2-Methylphenol	42.4	U	42.4	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.3	U	63.3	180	ug/Kg
98-86-2	Acetophenone	57.3	U	57.3	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.2	U	67.2	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.4	U	50.4	180	ug/Kg
67-72-1	Hexachloroethane	61.2	U	61.2	180	ug/Kg
98-95-3	Nitrobenzene	61.0	U	61.0	180	ug/Kg
78-59-1	Isophorone	66.8	U	66.8	180	ug/Kg
88-75-5	2-Nitrophenol	96.7	U	96.7	180	ug/Kg
105-67-9	2,4-Dimethylphenol	73.8	U	73.8	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	66.0	U	66.0	180	ug/Kg
120-83-2	2,4-Dichlorophenol	65.8	U	65.8	180	ug/Kg
91-20-3	Naphthalene	59.4	U	59.4	180	ug/Kg
106-47-8	4-Chloroaniline	86.4	U	86.4	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.2	U	60.2	180	ug/Kg
105-60-2	Caprolactam	170	U	170	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.2	U	92.2	180	ug/Kg
91-57-6	2-Methylnaphthalene	98.6	U	98.6	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	74.5	U	74.5	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.3	U	76.3	180	ug/Kg
92-52-4	1,1-Biphenyl	78.5	U	78.5	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.4	U	68.4	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	90.5	J	56.2	180	ug/Kg
208-96-8	Acenaphthylene	73.3	U	73.3	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	68.0	U	68.0	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.1
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003159.D	1	08/28/20 13:40	08/28/20 19:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	89.4	U	89.4	180	ug/Kg
83-32-9	Acenaphthene	73.0	U	73.0	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	350	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	350	ug/Kg
132-64-9	Dibenzofuran	73.5	U	73.5	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	66.8	U	66.8	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	77.9	U	77.9	180	ug/Kg
86-73-7	Fluorene	86.6	U	86.6	180	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.5	U	52.5	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.6	U	52.6	180	ug/Kg
118-74-1	Hexachlorobenzene	52.8	U	52.8	180	ug/Kg
1912-24-9	Atrazine	78.0	U	78.0	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	350	ug/Kg
85-01-8	Phenanthrene	73.0	U	73.0	180	ug/Kg
120-12-7	Anthracene	93.4	U	93.4	180	ug/Kg
86-74-8	Carbazole	100	U	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	110	U	110	180	ug/Kg
129-00-0	Pyrene	60.7	U	60.7	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	82.6	U	82.6	180	ug/Kg
56-55-3	Benzo(a)anthracene	59.8	U	59.8	180	ug/Kg
218-01-9	Chrysene	61.8	U	61.8	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	71.7	U	71.7	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	58.1	U	58.1	180	ug/Kg
50-32-8	Benzo(a)pyrene	67.4	U	67.4	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	350	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	74.7	U	74.7	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.1
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003159.D	1	08/28/20 13:40	08/28/20 19:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	62.8	U	62.8	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.2	U	68.2	180	ug/Kg
123-91-1	1,4-Dioxane	71.1	U	71.1	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	88.6	U	88.6	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	69.3		28 - 127	46%	SPK: 150
13127-88-3	Phenol-d6	65.9		34 - 127	44%	SPK: 150
4165-60-0	Nitrobenzene-d5	49.1		31 - 132	49%	SPK: 100
321-60-8	2-Fluorobiphenyl	47.5		39 - 123	48%	SPK: 100
118-79-6	2,4,6-Tribromophenol	69.6		30 - 133	46%	SPK: 150
1718-51-0	Terphenyl-d14	44.6		37 - 115	45%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	230000	7.66			
1146-65-2	Naphthalene-d8	923000	10.44			
15067-26-2	Acenaphthene-d10	567000	14.3			
1517-22-2	Phenanthrene-d10	1240000	17.05			
1719-03-5	Chrysene-d12	1400000	21.15			
1520-96-3	Perylene-d12	1360000	23.38			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~580~~	~~JB~~		~~2.93~~ R	ug/Kg
002004-39-9	1-Heptacosanol	180	J N		20.9	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003156.D	1	08/28/20 13:40	08/28/20 18:15	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	360	ug/Kg
108-95-2	Phenol	55.0	U	55.0	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	42.3	U	42.3	180	ug/Kg
95-57-8	2-Chlorophenol	49.3	U	49.3	180	ug/Kg
95-48-7	2-Methylphenol	42.7	U	42.7	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.7	U	63.7	180	ug/Kg
98-86-2	Acetophenone	57.7	U	57.7	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.7	U	67.7	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.7	U	50.7	180	ug/Kg
67-72-1	Hexachloroethane	61.6	U	61.6	180	ug/Kg
98-95-3	Nitrobenzene	61.4	U	61.4	180	ug/Kg
78-59-1	Isophorone	67.2	U	67.2	180	ug/Kg
88-75-5	2-Nitrophenol	97.4	U	97.4	180	ug/Kg
105-67-9	2,4-Dimethylphenol	74.3	U	74.3	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	66.5	U	66.5	180	ug/Kg
120-83-2	2,4-Dichlorophenol	66.3	U	66.3	180	ug/Kg
91-20-3	Naphthalene	59.8	U	59.8	180	ug/Kg
106-47-8	4-Chloroaniline	87.0	U	87.0	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.6	U	60.6	180	ug/Kg
105-60-2	Caprolactam	170	U	170	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.9	U	92.9	180	ug/Kg
91-57-6	2-Methylnaphthalene	99.3	U	99.3	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	75.0	U	75.0	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.9	U	76.9	180	ug/Kg
92-52-4	1,1-Biphenyl	79.1	U	79.1	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.9	U	68.9	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	95.2	J	56.6	180	ug/Kg
208-96-8	Acenaphthylene	73.8	U	73.8	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	68.5	U	68.5	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003156.D	1	08/28/20 13:40	08/28/20 18:15	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	90.1	U	90.1	180	ug/Kg
83-32-9	Acenaphthene	73.5	U	73.5	180	ug/Kg
51-28-5	2,4-Dinitrophenol	250	U	250	360	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	360	ug/Kg
132-64-9	Dibenzofuran	74.0	U	74.0	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	67.3	U	67.3	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	78.5	U	78.5	180	ug/Kg
86-73-7	Fluorene	87.2	U	87.2	180	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.8	U	52.8	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.9	U	52.9	180	ug/Kg
118-74-1	Hexachlorobenzene	53.2	U	53.2	180	ug/Kg
1912-24-9	Atrazine	78.5	U	78.5	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	360	ug/Kg
85-01-8	Phenanthrene	110	J	73.5	180	ug/Kg
120-12-7	Anthracene	94.1	U	94.1	180	ug/Kg
86-74-8	Carbazole	100	U	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	230		110	180	ug/Kg
129-00-0	Pyrene	170	J	61.1	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	83.2	U	83.2	180	ug/Kg
56-55-3	Benzo(a)anthracene	100	J	60.2	180	ug/Kg
218-01-9	Chrysene	120	J	62.2	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	170	J	72.2	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	58.5	U	58.5	180	ug/Kg
50-32-8	Benzo(a)pyrene	110	J	67.9	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	360	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	75.2	U	75.2	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003156.D	1	08/28/20 13:40	08/28/20 18:15	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	73.9	J	63.3	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.7	U	68.7	180	ug/Kg
123-91-1	1,4-Dioxane	71.6	U	71.6	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	89.2	U	89.2	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	79.0		28 - 127	53%	SPK: 150
13127-88-3	Phenol-d6	75.9		34 - 127	51%	SPK: 150
4165-60-0	Nitrobenzene-d5	56.0		31 - 132	56%	SPK: 100
321-60-8	2-Fluorobiphenyl	52.8		39 - 123	53%	SPK: 100
118-79-6	2,4,6-Tribromophenol	80.4		30 - 133	54%	SPK: 150
1718-51-0	Terphenyl-d14	47.8		37 - 115	48%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	205000	7.66			
1146-65-2	Naphthalene-d8	831000	10.44			
15067-26-2	Acenaphthene-d10	529000	14.3			
1517-22-2	Phenanthrene-d10	1170000	17.05			
1719-03-5	Chrysene-d12	1360000	21.14			
1520-96-3	Perylene-d12	1510000	23.38			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~680~~	~~JB~~		~~2.93~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	130	J		18.0	ug/Kg
000295-65-8	Cyclohexadecane	180	J		20.9	ug/Kg
000112-95-8	Eicosane	160	J		21.8	ug/Kg
000629-98-1	13-Docosen-1-ol, (Z)-	90.5	J		22.4	ug/Kg
000506-51-4	n-Tetracosanol-1	160	J		22.8	ug/Kg
000192-97-2	Benzo[e]pyrene	95.2	J		23.2	ug/Kg
041755-58-2	Triacontyl acetate	130	J		23.6	ug/Kg
000629-78-7	Heptadecane	170	J		24.0	ug/Kg
000297-03-0	Cyclotetracosane	110	J		24.0	ug/Kg
1000376-70-0	Heptadecanal	120	J		25.2	ug/Kg
~~000083-46-5~~	~~.beta.-Sitosterol~~ Unknown	140	J		26.5	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.8
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003156.D	1	08/28/20 13:40	08/28/20 18:15	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121466.D	1	08/28/20 13:40	08/28/20 18:30	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	360	ug/Kg
108-95-2	Phenol	54.9	U	54.9	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	42.2	U	42.2	180	ug/Kg
95-57-8	2-Chlorophenol	49.2	U	49.2	180	ug/Kg
95-48-7	2-Methylphenol	42.6	U	42.6	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.6	U	63.6	180	ug/Kg
98-86-2	Acetophenone	57.6	U	57.6	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.5	U	67.5	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.7	U	50.7	180	ug/Kg
67-72-1	Hexachloroethane	61.5	U	61.5	180	ug/Kg
98-95-3	Nitrobenzene	61.3	U	61.3	180	ug/Kg
78-59-1	Isophorone	67.1	U	67.1	180	ug/Kg
88-75-5	2-Nitrophenol	97.2	U	97.2	180	ug/Kg
105-67-9	2,4-Dimethylphenol	74.2	U	74.2	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	66.4	U	66.4	180	ug/Kg
120-83-2	2,4-Dichlorophenol	66.2	U	66.2	180	ug/Kg
91-20-3	Naphthalene	59.7	U	59.7	180	ug/Kg
106-47-8	4-Chloroaniline	86.9	U	86.9	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.5	U	60.5	180	ug/Kg
105-60-2	Caprolactam	170	U	170	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.7	U	92.7	180	ug/Kg
91-57-6	2-Methylnaphthalene	99.2	U	99.2	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	74.9	U	74.9	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.7	U	76.7	180	ug/Kg
92-52-4	1,1-Biphenyl	78.9	U	78.9	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.8	U	68.8	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	180	J	56.5	180	ug/Kg
208-96-8	Acenaphthylene	73.7	U	73.7	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	68.4	U	68.4	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121466.D	1	08/28/20 13:40	08/28/20 18:30	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	89.9	U	89.9	180	ug/Kg
83-32-9	Acenaphthene	73.4	U	73.4	180	ug/Kg
51-28-5	2,4-Dinitrophenol	250	U	250	360	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	360	ug/Kg
132-64-9	Dibenzofuran	73.8	U	73.8	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	67.2	U	67.2	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	78.3	U	78.3	180	ug/Kg
86-73-7	Fluorene	87.1	U	87.1	180	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.7	U	52.7	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.8	U	52.8	180	ug/Kg
118-74-1	Hexachlorobenzene	53.1	U	53.1	180	ug/Kg
1912-24-9	Atrazine	78.4	U	78.4	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	360	ug/Kg
85-01-8	Phenanthrene	86.6	J	73.4	180	ug/Kg
120-12-7	Anthracene	93.9	U	93.9	180	ug/Kg
86-74-8	Carbazole	100	U	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	180		110	180	ug/Kg
129-00-0	Pyrene	170	J	61.0	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	83.1	U	83.1	180	ug/Kg
56-55-3	Benzo(a)anthracene	91.0	J	60.1	180	ug/Kg
218-01-9	Chrysene	100	J	62.1	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	140	J	72.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	58.4	U	58.4	180	ug/Kg
50-32-8	Benzo(a)pyrene	98.6	J	67.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	360	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	75.1	U	75.1	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121466.D	1	08/28/20 13:40	08/28/20 18:30	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	91.1	J	63.1	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.6	U	68.6	180	ug/Kg
123-91-1	1,4-Dioxane	71.5	U	71.5	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	89.0	U	89.0	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	78.8		28 - 127	53%	SPK: 150
13127-88-3	Phenol-d6	73.6		34 - 127	49%	SPK: 150
4165-60-0	Nitrobenzene-d5	68.2		31 - 132	68%	SPK: 100
321-60-8	2-Fluorobiphenyl	55.7		39 - 123	56%	SPK: 100
118-79-6	2,4,6-Tribromophenol	86.8		30 - 133	58%	SPK: 150
1718-51-0	Terphenyl-d14	56.1		37 - 115	56%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	299000	6.86			
1146-65-2	Naphthalene-d8	1170000	8.14			
15067-26-2	Acenaphthene-d10	600000	9.9			
1517-22-2	Phenanthrene-d10	1130000	11.38			
1719-03-5	Chrysene-d12	794000	14.02			
1520-96-3	Perylene-d12	703000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~980~~	~~JB~~		~~2.16~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	160	J N		11.9	ug/Kg
015594-90-8	1-Heneicosanol	310	J N		13.9	ug/Kg
000112-95-8	Eicosane	200	J N		14.5	ug/Kg
000111-02-4	Squalene	79.9	J N		14.9	ug/Kg
057866-08-7	Tetracosanal	160	J N		14.9	ug/Kg
000629-94-7	Heneicosane	320	J N		15.2	ug/Kg
~~1000330-55-3~~	~~Fumaric acid, 2-methylallyl tetrad~~	230	J		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	90.7	J N		15.4	ug/Kg
000638-66-4	Octadecanal	210	J N		15.7	ug/Kg
000593-45-3	Octadecane	220	J N		16.0	ug/Kg
002004-39-9	1-Heptacosanol	160	J N		16.0	ug/Kg
014811-95-1	1,19-Eicosadiene	150	J N		16.8	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.09 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121466.D	1	08/28/20 13:40	08/28/20 18:30	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
007098-22-8	Tetratetracontane	120	J N		17.1	ug/Kg
000083-47-6	.gamma.-Sitosterol	190	J N		17.6	ug/Kg

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U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121463.D	1	08/28/20 13:40	08/28/20 16:56	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	350	ug/Kg
108-95-2	Phenol	53.4	U	53.4	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	41.0	U	41.0	180	ug/Kg
95-57-8	2-Chlorophenol	47.8	U	47.8	180	ug/Kg
95-48-7	2-Methylphenol	41.4	U	41.4	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	61.8	U	61.8	180	ug/Kg
98-86-2	Acetophenone	56.0	U	56.0	180	ug/Kg
65794-96-9	3+4-Methylphenols	65.6	U	65.6	350	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	49.2	U	49.2	180	ug/Kg
67-72-1	Hexachloroethane	59.8	U	59.8	180	ug/Kg
98-95-3	Nitrobenzene	59.6	U	59.6	180	ug/Kg
78-59-1	Isophorone	65.2	U	65.2	180	ug/Kg
88-75-5	2-Nitrophenol	94.5	U	94.5	180	ug/Kg
105-67-9	2,4-Dimethylphenol	72.1	U	72.1	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	64.5	U	64.5	180	ug/Kg
120-83-2	2,4-Dichlorophenol	64.3	U	64.3	180	ug/Kg
91-20-3	Naphthalene	58.0	U	58.0	180	ug/Kg
106-47-8	4-Chloroaniline	84.4	U	84.4	180	ug/Kg
87-68-3	Hexachlorobutadiene	58.8	U	58.8	180	ug/Kg
105-60-2	Caprolactam	160	U	160	350	ug/Kg
59-50-7	4-Chloro-3-methylphenol	90.1	U	90.1	180	ug/Kg
91-57-6	2-Methylnaphthalene	96.4	U	96.4	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	350	ug/Kg
88-06-2	2,4,6-Trichlorophenol	72.8	U	72.8	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	74.6	U	74.6	180	ug/Kg
92-52-4	1,1-Biphenyl	76.7	U	76.7	180	ug/Kg
91-58-7	2-Chloronaphthalene	66.8	U	66.8	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	200		54.9	180	ug/Kg
208-96-8	Acenaphthylene	71.6	U	71.6	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	66.5	U	66.5	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121463.D	1	08/28/20 13:40	08/28/20 16:56	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	87.4	U	87.4	180	ug/Kg
83-32-9	Acenaphthene	71.3	U	71.3	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	350	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	350	ug/Kg
132-64-9	Dibenzofuran	71.8	U	71.8	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	65.3	U	65.3	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	76.1	U	76.1	180	ug/Kg
86-73-7	Fluorene	84.6	U	84.6	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	350	ug/Kg
86-30-6	n-Nitrosodiphenylamine	51.3	U	51.3	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	51.3	U	51.3	180	ug/Kg
118-74-1	Hexachlorobenzene	51.6	U	51.6	180	ug/Kg
1912-24-9	Atrazine	76.2	U	76.2	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	350	ug/Kg
85-01-8	Phenanthrene	190		71.3	180	ug/Kg
120-12-7	Anthracene	91.2	U	91.2	180	ug/Kg
86-74-8	Carbazole	98.5	U	98.5	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	240		110	180	ug/Kg
129-00-0	Pyrene	200		59.3	180	ug/Kg
85-68-7	Butylbenzylphthalate	97.9	U	97.9	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	80.7	U	80.7	180	ug/Kg
56-55-3	Benzo(a)anthracene	120	J	58.4	180	ug/Kg
218-01-9	Chrysene	110	J	60.4	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	350	ug/Kg
205-99-2	Benzo(b)fluoranthene	140	J	70.1	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	56.7	U	56.7	180	ug/Kg
50-32-8	Benzo(a)pyrene	110	J	65.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	350	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	73.0	U	73.0	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121463.D	1	08/28/20 13:40	08/28/20 16:56	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	82.1	J	61.4	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	66.6	U	66.6	180	ug/Kg
123-91-1	1,4-Dioxane	69.5	U	69.5	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	86.5	U	86.5	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	80.8		28 - 127	54%	SPK: 150
13127-88-3	Phenol-d6	75.0		34 - 127	50%	SPK: 150
4165-60-0	Nitrobenzene-d5	69.6		31 - 132	70%	SPK: 100
321-60-8	2-Fluorobiphenyl	57.3		39 - 123	57%	SPK: 100
118-79-6	2,4,6-Tribromophenol	86.8		30 - 133	58%	SPK: 150
1718-51-0	Terphenyl-d14	56.6		37 - 115	57%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	310000	6.86			
1146-65-2	Naphthalene-d8	1210000	8.14			
15067-26-2	Acenaphthene-d10	627000	9.9			
1517-22-2	Phenanthrene-d10	1170000	11.38			
1719-03-5	Chrysene-d12	831000	14.02			
1520-96-3	Perylene-d12	738000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~960~~	~~JB~~		~~2.16~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	180	J N		11.9	ug/Kg
074685-30-6	5-Eicosene, (E)-	380	J N		13.9	ug/Kg
000593-45-3	Octadecane	190	J N		14.5	ug/Kg
000111-02-4	Squalene	100	J N		14.9	ug/Kg
000638-66-4	Octadecanal	230	J N		14.9	ug/Kg
000544-76-3	Hexadecane	360	J N		15.2	ug/Kg
~~000112-92-5~~	~~1-Octadecanol~~ Unknown	350	J		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	84.0	J N		15.4	ug/Kg
007390-81-0	Oxirane, hexadecyl-	270	J N		15.7	ug/Kg
000629-94-7	Heneicosane	250	J N		16.0	ug/Kg
000506-51-4	n-Tetracosanol-1	200	J N		16.0	ug/Kg
014811-95-1	1,19-Eicosadiene	190	J N		16.8	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	4.9
Sample Wt/Vol:	30.05 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121463.D	1	08/28/20 13:40	08/28/20 16:56	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
000193-43-1	Indeno[1,2,3-cd]fluoranthene	84.0	J N		16.9	ug/Kg
000629-92-5	Nonadecane	130	J N		17.1	ug/Kg
000083-47-6	.gamma.-Sitosterol	190	J N		17.6	ug/Kg

9/21/2020

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup : N	PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121465.D	1	08/28/20 13:40	08/28/20 17:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	100	U	100	340	ug/Kg
108-95-2	Phenol	52.5	U	52.5	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	40.3	U	40.3	180	ug/Kg
95-57-8	2-Chlorophenol	47.0	U	47.0	180	ug/Kg
95-48-7	2-Methylphenol	40.7	U	40.7	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	60.7	U	60.7	180	ug/Kg
98-86-2	Acetophenone	55.0	U	55.0	180	ug/Kg
65794-96-9	3+4-Methylphenols	64.5	U	64.5	340	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	48.4	U	48.4	180	ug/Kg
67-72-1	Hexachloroethane	58.7	U	58.7	180	ug/Kg
98-95-3	Nitrobenzene	58.6	U	58.6	180	ug/Kg
78-59-1	Isophorone	64.1	U	64.1	180	ug/Kg
88-75-5	2-Nitrophenol	92.9	U	92.9	180	ug/Kg
105-67-9	2,4-Dimethylphenol	70.8	U	70.8	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	63.4	U	63.4	180	ug/Kg
120-83-2	2,4-Dichlorophenol	63.2	U	63.2	180	ug/Kg
91-20-3	Naphthalene	57.0	U	57.0	180	ug/Kg
106-47-8	4-Chloroaniline	83.0	U	83.0	180	ug/Kg
87-68-3	Hexachlorobutadiene	57.8	U	57.8	180	ug/Kg
105-60-2	Caprolactam	160	U	160	340	ug/Kg
59-50-7	4-Chloro-3-methylphenol	88.5	U	88.5	180	ug/Kg
91-57-6	2-Methylnaphthalene	94.7	U	94.7	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	340	ug/Kg
88-06-2	2,4,6-Trichlorophenol	71.5	U	71.5	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	73.3	U	73.3	180	ug/Kg
92-52-4	1,1-Biphenyl	75.4	U	75.4	180	ug/Kg
91-58-7	2-Chloronaphthalene	65.7	U	65.7	180	ug/Kg
88-74-4	2-Nitroaniline	99.0	U	99.0	180	ug/Kg
131-11-3	Dimethylphthalate	160	J	53.9	180	ug/Kg
208-96-8	Acenaphthylene	70.4	U	70.4	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	65.3	U	65.3	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121465.D	1	08/28/20 13:40	08/28/20 17:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	85.9	U	85.9	180	ug/Kg
83-32-9	Acenaphthene	70.1	U	70.1	180	ug/Kg
51-28-5	2,4-Dinitrophenol	230	U	230	340	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	340	ug/Kg
132-64-9	Dibenzofuran	70.5	U	70.5	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	64.2	U	64.2	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	74.8	U	74.8	180	ug/Kg
86-73-7	Fluorene	83.2	U	83.2	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	340	ug/Kg
86-30-6	n-Nitrosodiphenylamine	50.4	U	50.4	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	50.5	U	50.5	180	ug/Kg
118-74-1	Hexachlorobenzene	50.7	U	50.7	180	ug/Kg
1912-24-9	Atrazine	74.9	U	74.9	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	340	ug/Kg
85-01-8	Phenanthrene	70.1	U	70.1	180	ug/Kg
120-12-7	Anthracene	89.7	U	89.7	180	ug/Kg
86-74-8	Carbazole	96.8	U	96.8	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	110	U	110	180	ug/Kg
129-00-0	Pyrene	82.3	J	58.3	180	ug/Kg
85-68-7	Butylbenzylphthalate	96.2	U	96.2	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	79.3	U	79.3	180	ug/Kg
56-55-3	Benzo(a)anthracene	57.4	U	57.4	180	ug/Kg
218-01-9	Chrysene	59.3	U	59.3	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	340	ug/Kg
205-99-2	Benzo(b)fluoranthene	68.9	U	68.9	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	55.8	U	55.8	180	ug/Kg
50-32-8	Benzo(a)pyrene	64.7	U	64.7	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	340	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	71.7	U	71.7	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121465.D	1	08/28/20 13:40	08/28/20 17:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	60.3	U	60.3	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	65.5	U	65.5	180	ug/Kg
123-91-1	1,4-Dioxane	68.3	U	68.3	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	85.0	U	85.0	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	75.1		28 - 127	50%	SPK: 150
13127-88-3	Phenol-d6	69.5		34 - 127	46%	SPK: 150
4165-60-0	Nitrobenzene-d5	64.6		31 - 132	65%	SPK: 100
321-60-8	2-Fluorobiphenyl	54.2		39 - 123	54%	SPK: 100
118-79-6	2,4,6-Tribromophenol	81.6		30 - 133	54%	SPK: 150
1718-51-0	Terphenyl-d14	52.6		37 - 115	53%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	294000	6.86			
1146-65-2	Naphthalene-d8	1140000	8.14			
15067-26-2	Acenaphthene-d10	597000	9.9			
1517-22-2	Phenanthrene-d10	1130000	11.38			
1719-03-5	Chrysene-d12	840000	14.02			
1520-96-3	Perylene-d12	732000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~800~~	~~JB~~		~~2.15~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	120	J N		11.9	ug/Kg
074685-30-6	5-Eicosene, (E)-	310	J N		13.9	ug/Kg
002136-70-1	Ethanol, 2-(tetradecyloxy)-	99.7	J N		14.5	ug/Kg
014811-95-1	1,19-Eicosadiene	150	J N		14.9	ug/Kg
000630-01-3	Hexacosane	120	J N		15.2	ug/Kg
015594-90-8	1-Heneicosanol	300	J N		15.2	ug/Kg
000638-66-4	Octadecanal	140	J N		15.7	ug/Kg
054833-48-6	Heptadecane, 2,6,10,15-tetramethyl	120	J N		16.0	ug/Kg
000661-19-8	Behenic alcohol	120	J N		16.0	ug/Kg
007390-81-0	Oxirane, hexadecyl-	87.0	J N		16.8	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.3
Sample Wt/Vol:	30.07 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121465.D	1	08/28/20 13:40	08/28/20 17:58	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121464.D	1	08/28/20 13:40	08/28/20 17:27	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	340	ug/Kg
108-95-2	Phenol	52.8	U	52.8	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	40.5	U	40.5	180	ug/Kg
95-57-8	2-Chlorophenol	47.3	U	47.3	180	ug/Kg
95-48-7	2-Methylphenol	40.9	U	40.9	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	61.1	U	61.1	180	ug/Kg
98-86-2	Acetophenone	55.3	U	55.3	180	ug/Kg
65794-96-9	3+4-Methylphenols	64.9	U	64.9	340	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	48.7	U	48.7	180	ug/Kg
67-72-1	Hexachloroethane	59.1	U	59.1	180	ug/Kg
98-95-3	Nitrobenzene	58.9	U	58.9	180	ug/Kg
78-59-1	Isophorone	64.5	U	64.5	180	ug/Kg
88-75-5	2-Nitrophenol	93.4	U	93.4	180	ug/Kg
105-67-9	2,4-Dimethylphenol	71.3	U	71.3	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	63.8	U	63.8	180	ug/Kg
120-83-2	2,4-Dichlorophenol	63.6	U	63.6	180	ug/Kg
91-20-3	Naphthalene	57.4	U	57.4	180	ug/Kg
106-47-8	4-Chloroaniline	83.5	U	83.5	180	ug/Kg
87-68-3	Hexachlorobutadiene	58.2	U	58.2	180	ug/Kg
105-60-2	Caprolactam	160	U	160	340	ug/Kg
59-50-7	4-Chloro-3-methylphenol	89.1	U	89.1	180	ug/Kg
91-57-6	2-Methylnaphthalene	95.3	U	95.3	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	340	ug/Kg
88-06-2	2,4,6-Trichlorophenol	72.0	U	72.0	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	73.8	U	73.8	180	ug/Kg
92-52-4	1,1-Biphenyl	75.9	U	75.9	180	ug/Kg
91-58-7	2-Chloronaphthalene	66.1	U	66.1	180	ug/Kg
88-74-4	2-Nitroaniline	99.6	U	99.6	180	ug/Kg
131-11-3	Dimethylphthalate	170	J	54.3	180	ug/Kg
208-96-8	Acenaphthylene	70.8	U	70.8	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	65.7	U	65.7	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121464.D	1	08/28/20 13:40	08/28/20 17:27	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	86.4	U	86.4	180	ug/Kg
83-32-9	Acenaphthene	70.5	U	70.5	180	ug/Kg
51-28-5	2,4-Dinitrophenol	240	U	240	340	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	340	ug/Kg
132-64-9	Dibenzofuran	71.0	U	71.0	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	64.6	U	64.6	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	75.3	U	75.3	180	ug/Kg
86-73-7	Fluorene	83.7	U	83.7	180	ug/Kg
100-01-6	4-Nitroaniline	100	U	100	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	340	ug/Kg
86-30-6	n-Nitrosodiphenylamine	50.7	U	50.7	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	50.8	U	50.8	180	ug/Kg
118-74-1	Hexachlorobenzene	51.0	U	51.0	180	ug/Kg
1912-24-9	Atrazine	75.3	U	75.3	180	ug/Kg
87-86-5	Pentachlorophenol	140	U	140	340	ug/Kg
85-01-8	Phenanthrene	70.5	U	70.5	180	ug/Kg
120-12-7	Anthracene	90.2	U	90.2	180	ug/Kg
86-74-8	Carbazole	97.4	U	97.4	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	110	U	110	180	ug/Kg
129-00-0	Pyrene	58.7	U	58.7	180	ug/Kg
85-68-7	Butylbenzylphthalate	96.8	U	96.8	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	79.8	U	79.8	180	ug/Kg
56-55-3	Benzo(a)anthracene	57.8	U	57.8	180	ug/Kg
218-01-9	Chrysene	59.7	U	59.7	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	340	ug/Kg
205-99-2	Benzo(b)fluoranthene	69.3	U	69.3	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	56.1	U	56.1	180	ug/Kg
50-32-8	Benzo(a)pyrene	65.1	U	65.1	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	340	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	72.2	U	72.2	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121464.D	1	08/28/20 13:40	08/28/20 17:27	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	60.7	U	60.7	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	65.9	U	65.9	180	ug/Kg
123-91-1	1,4-Dioxane	68.7	U	68.7	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	85.6	U	85.6	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	81.2		28 - 127	54%	SPK: 150
13127-88-3	Phenol-d6	76.3		34 - 127	51%	SPK: 150
4165-60-0	Nitrobenzene-d5	70.9		31 - 132	71%	SPK: 100
321-60-8	2-Fluorobiphenyl	59.2		39 - 123	59%	SPK: 100
118-79-6	2,4,6-Tribromophenol	90.5		30 - 133	60%	SPK: 150
1718-51-0	Terphenyl-d14	57.6		37 - 115	58%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	300000	6.86			
1146-65-2	Naphthalene-d8	1170000	8.14			
15067-26-2	Acenaphthene-d10	612000	9.9			
1517-22-2	Phenanthrene-d10	1160000	11.38			
1719-03-5	Chrysene-d12	844000	14.02			
1520-96-3	Perylene-d12	724000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~930~~	~~JB~~		~~2.16~~ R	ug/Kg
000057-10-3	n-Hexadecanoic acid	130	J N		11.9	ug/Kg
074685-30-6	5-Eicosene, (E)-	500	J N		13.9	ug/Kg
015594-90-8	1-Heneicosanol	84.1	J N		14.5	ug/Kg
000112-84-5	13-Docosenamide, (Z)- unknown	100	J		14.8	ug/Kg
007390-81-0	Oxirane, hexadecyl-	83.7	J N		14.9	ug/Kg
054833-48-6	Heptadecane, 2,6,10,15-tetramethyl	69.9	J N		15.2	ug/Kg
000661-19-8	Behenic alcohol	160	J N		15.2	ug/Kg
007098-22-8	Tetratetracontane	74.4	J N		16.0	ug/Kg
000506-51-4	n-Tetracosanol-1	150	J N		16.0	ug/Kg

9/21/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	3.8
Sample Wt/Vol:	30.04 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121464.D	1	08/28/20 13:40	08/28/20 17:27	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121469.D	1	08/28/20 13:40	08/28/20 20:03	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
100-52-7	Benzaldehyde	110	U	110	360	ug/Kg
108-95-2	Phenol	55.0	U	55.0	180	ug/Kg
111-44-4	bis(2-Chloroethyl)ether	42.2	U	42.2	180	ug/Kg
95-57-8	2-Chlorophenol	49.3	U	49.3	180	ug/Kg
95-48-7	2-Methylphenol	42.6	U	42.6	180	ug/Kg
108-60-1	2,2-oxybis(1-Chloropropane)	63.7	U	63.7	180	ug/Kg
98-86-2	Acetophenone	57.6	U	57.6	180	ug/Kg
65794-96-9	3+4-Methylphenols	67.6	U	67.6	360	ug/Kg
621-64-7	n-Nitroso-di-n-propylamine	50.7	U	50.7	180	ug/Kg
67-72-1	Hexachloroethane	61.6	U	61.6	180	ug/Kg
98-95-3	Nitrobenzene	61.4	U	61.4	180	ug/Kg
78-59-1	Isophorone	67.2	U	67.2	180	ug/Kg
88-75-5	2-Nitrophenol	97.3	U	97.3	180	ug/Kg
105-67-9	2,4-Dimethylphenol	74.2	U	74.2	180	ug/Kg
111-91-1	bis(2-Chloroethoxy)methane	66.4	U	66.4	180	ug/Kg
120-83-2	2,4-Dichlorophenol	66.2	U	66.2	180	ug/Kg
91-20-3	Naphthalene	95.8	J	59.7	180	ug/Kg
106-47-8	4-Chloroaniline	86.9	U	86.9	180	ug/Kg
87-68-3	Hexachlorobutadiene	60.6	U	60.6	180	ug/Kg
105-60-2	Caprolactam	170	U	170	360	ug/Kg
59-50-7	4-Chloro-3-methylphenol	92.8	U	92.8	180	ug/Kg
91-57-6	2-Methylnaphthalene	99.3	U	99.3	180	ug/Kg
77-47-4	Hexachlorocyclopentadiene	190	U	190	360	ug/Kg
88-06-2	2,4,6-Trichlorophenol	75.0	U	75.0	180	ug/Kg
95-95-4	2,4,5-Trichlorophenol	76.8	U	76.8	180	ug/Kg
92-52-4	1,1-Biphenyl	79.0	U	79.0	180	ug/Kg
91-58-7	2-Chloronaphthalene	68.8	U	68.8	180	ug/Kg
88-74-4	2-Nitroaniline	100	U	100	180	ug/Kg
131-11-3	Dimethylphthalate	180		56.5	180	ug/Kg
208-96-8	Acenaphthylene	73.8	U	73.8	180	ug/Kg
606-20-2	2,6-Dinitrotoluene	68.5	U	68.5	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121469.D	1	08/28/20 13:40	08/28/20 20:03	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
99-09-2	3-Nitroaniline	90.0	U	90.0	180	ug/Kg
83-32-9	Acenaphthene	73.4	U	73.4	180	ug/Kg
51-28-5	2,4-Dinitrophenol	250	U	250	360	ug/Kg
100-02-7	4-Nitrophenol	120	U	120	360	ug/Kg
132-64-9	Dibenzofuran	73.9	U	73.9	180	ug/Kg
121-14-2	2,4-Dinitrotoluene	110	U	110	180	ug/Kg
84-66-2	Diethylphthalate	67.2	U	67.2	180	ug/Kg
7005-72-3	4-Chlorophenyl-phenylether	78.4	U	78.4	180	ug/Kg
86-73-7	Fluorene	87.2	U	87.2	180	ug/Kg
100-01-6	4-Nitroaniline	110	U	110	180	ug/Kg
534-52-1	4,6-Dinitro-2-methylphenol	120	U	120	360	ug/Kg
86-30-6	n-Nitrosodiphenylamine	52.8	U	52.8	180	ug/Kg
101-55-3	4-Bromophenyl-phenylether	52.9	U	52.9	180	ug/Kg
118-74-1	Hexachlorobenzene	53.1	U	53.1	180	ug/Kg
1912-24-9	Atrazine	78.5	U	78.5	180	ug/Kg
87-86-5	Pentachlorophenol	150	U	150	360	ug/Kg
85-01-8	Phenanthrene	560		73.5	180	ug/Kg
120-12-7	Anthracene	130	J	94.0	180	ug/Kg
86-74-8	Carbazole	100	J	100	180	ug/Kg
84-74-2	Di-n-butylphthalate	130	U	130	180	ug/Kg
206-44-0	Fluoranthene	540		110	180	ug/Kg
129-00-0	Pyrene	460		61.1	180	ug/Kg
85-68-7	Butylbenzylphthalate	100	U	100	180	ug/Kg
91-94-1	3,3-Dichlorobenzidine	83.1	U	83.1	180	ug/Kg
56-55-3	Benzo(a)anthracene	260		60.2	180	ug/Kg
218-01-9	Chrysene	220		62.2	180	ug/Kg
117-81-7	Bis(2-ethylhexyl)phthalate	110	U	110	180	ug/Kg
117-84-0	Di-n-octyl phthalate	120	U	120	360	ug/Kg
205-99-2	Benzo(b)fluoranthene	230		72.2	180	ug/Kg
207-08-9	Benzo(k)fluoranthene	80.4	J	58.4	180	ug/Kg
50-32-8	Benzo(a)pyrene	170	J	67.8	180	ug/Kg
193-39-5	Indeno(1,2,3-cd)pyrene	140	U	140	360	ug/Kg
53-70-3	Dibenzo(a,h)anthracene	75.2	U	75.2	180	ug/Kg

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121469.D	1	08/28/20 13:40	08/28/20 20:03	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
191-24-2	Benzo(g,h,i)perylene	110	J	63.2	180	ug/Kg
95-94-3	1,2,4,5-Tetrachlorobenzene	68.6	U	68.6	180	ug/Kg
123-91-1	1,4-Dioxane	71.5	U	71.5	180	ug/Kg
58-90-2	2,3,4,6-Tetrachlorophenol	89.1	U	89.1	180	ug/Kg
SURROGATES						
367-12-4	2-Fluorophenol	69.8		28 - 127	47%	SPK: 150
13127-88-3	Phenol-d6	65.4		34 - 127	44%	SPK: 150
4165-60-0	Nitrobenzene-d5	61.4		31 - 132	61%	SPK: 100
321-60-8	2-Fluorobiphenyl	51.1		39 - 123	51%	SPK: 100
118-79-6	2,4,6-Tribromophenol	77.9		30 - 133	52%	SPK: 150
1718-51-0	Terphenyl-d14	51.4		37 - 115	51%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	320000	6.86			
1146-65-2	Naphthalene-d8	1230000	8.14			
15067-26-2	Acenaphthene-d10	634000	9.9			
1517-22-2	Phenanthrene-d10	1180000	11.38			
1719-03-5	Chrysene-d12	805000	14.02			
1520-96-3	Perylene-d12	741000	15.49			
TENTATIVE IDENTIFIED COMPOUNDS						
~~000994-05-8~~	~~Butane, 2-methoxy-2-methyl-~~	~~850~~	~~JB~~		~~2.16~~ R	ug/Kg
002531-84-2	Phenanthrene, 2-methyl-	220	J N		11.9	ug/Kg
000203-64-5	4H-Cyclopenta[def]phenanthrene	94.8	J N		12.0	ug/Kg
074339-53-0	Trichloroacetic acid, pentadecyl e	270	J N		13.9	ug/Kg
000112-84-5	13-Docosenamide, (Z)- unknown	75.0	J		14.8	ug/Kg
000638-66-4	Octadecanal	88.3	J N		14.9	ug/Kg
1000130-92-0	E-7-Octadecene	200	J N		15.2	ug/Kg
000192-97-2	Benzo[e]pyrene	130	J N		15.4	ug/Kg
000629-94-7	Heneicosane	86.5	J N		16.0	ug/Kg
002004-39-9	1-Heptacosanol	120	J N		16.0	ug/Kg

9/2/20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8270	% Moisture:	7.7
Sample Wt/Vol:	30.06 Units: g	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	SVOC-TCL BNA -20
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BF121469.D	1	08/28/20 13:40	08/28/20 20:03	PB131281

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	

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LAB CHRONICLE

L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	

TAL Pesticides Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09	L3837-10
Sample weight (g)	30.08	30.05	30.07	30.04	30.06
Percent Moisture	5.4	7	6	4.3	13.9
Dilution Factor	1	1	1	1	1
TAL PESTICIDE - (ug/Kg)					
alpha-BHC	0.25 U	0.255 U	0.252 U	0.248 U	0.275 U
beta-BHC	0.335 U	0.342 U	0.338 U	0.332 U	0.369 U
delta-BHC	0.273 U	0.278 U	0.275 U	0.27 U	0.3 U
gamma-BHC (Lindane)	0.335 U	0.341 U	0.337 U	0.332 U	0.368 U
Heptachlor	0.144 U	0.147 U	0.145 U	0.143 U	0.159 U
Aldrin	0.178 U	0.182 U	0.18 U	0.177 U	0.196 U
Heptachlor epoxide	0.324 U	0.33 U	0.326 U	0.321 U	0.356 U
Endosulfan I	0.184 U	0.188 U	0.186 U	0.182 U	0.203 U
Dieldrin	0.152 U	0.154 U	0.153 U	0.15 U	0.167 U
4,4-DDE	**0.4955 J**	**0.4294 J**	**0.2017 J**	**0.9288 J**	**4**
Endrin	0.158 U	0.161 U	0.159 U	0.157 U	0.174 U
Endosulfan II	0.118 U	0.12 U	0.118 U	0.116 U	0.129 U
4,4-DDD	0.226 U	0.23 U	0.227 U	0.223 U	0.248 U
Endosulfan Sulfate	0.237 U	0.242 U	0.239 U	0.235 U	0.261 U
4,4-DDT	1.8 U	**0.7693 J**	**0.276 J**	**0.9322 J**	**2.8 J**
Methoxychlor	0.158 U	0.161 U	0.159 U	0.156 U	0.173 U
Endrin ketone	0.123 U	0.125 U	0.124 U	0.122 U	0.135 U
Endrin aldehyde	0.246 U	0.25 U	0.248 U	0.243 U	0.27 U
alpha-Chlordane	0.154 U	0.157 U	0.155 U	0.152 U	0.169 U
gamma-Chlordane	0.305 U	0.31 U	0.307 U	0.302 U	0.335 U
Toxaphene	2.1 U	2.1 U	2.1 U	2.1 U	2.3 U

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

TAL Pesticides Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01
Lab sample ID No.:	L3837-11	L3837-12	L3837-13	L3837-16	L3837-17
Sample weight (g)	30.08	30.05	30.07	30.07	30.04
Percent Moisture	7.4	7.1	7.8	7.7	4.9
Dilution Factor	1	1	1	1	1
TAL PESTICIDE - (ug/Kg)					
alpha-BHC	0.256 U	0.255 U	0.257 U	0.256 U	0.249 U
beta-BHC	0.343 U	0.342 U	0.344 U	0.344 U	0.334 U
delta-BHC	0.279 U	0.278 U	0.28 U	0.28 U	0.272 U
gamma-BHC (Lindane)	0.342 U	0.342 U	0.344 U	0.344 U	0.334 U
Heptachlor	0.147 U	0.147 U	0.148 U	0.148 U	0.144 U
Aldrin	0.182 U	0.182 U	0.183 U	0.183 U	0.178 U
Heptachlor epoxide	0.331 U	0.33 U	0.333 U	0.332 U	0.323 U
Endosulfan I	0.188 U	0.188 U	0.189 U	0.189 U	0.184 U
Dieldrin	0.155 U	0.155 U	0.156 U	0.156 U	0.151 U
4,4-DDE	**0.2154 J**	**0.2006 J**	**19.8**	**14.6**	**8.6 J**
Endrin	0.162 U	0.161 U	0.162 U	0.162 U	0.158 U
Endosulfan II	0.12 U	0.12 U	0.121 U	0.12 U	0.117 U
4,4-DDD	0.231 U	0.23 U	0.232 U	0.231 U	0.225 U
Endosulfan Sulfate	0.242 U	0.242 U	0.244 U	0.243 U	0.236 U
4,4-DDT	0.176 U	0.176 U	**8.9**	**6.5**	**3.2 J**
Methoxychlor	0.161 U	0.161 U	0.162 U	0.162 U	0.157 U
Endrin ketone	0.126 U	0.126 U	0.126 U	0.126 U	0.123 U
Endrin aldehyde	0.251 U	0.251 U	0.252 U	0.252 U	0.245 U
alpha-Chlordane	0.157 U	0.157 U	0.158 U	0.158 U	0.153 U
gamma-Chlordane	0.312 U	0.311 U	0.313 U	0.313 U	0.304 U
Toxaphene	2.1 U	2.1 U	2.2 U	2.2 U	2.1 U

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

TAL Pesticides Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-18	L3837-19	L3837-20
Sample weight (g)	30.08	30.07	30.05
Percent Moisture	3.3	3.8	7.7
Dilution Factor	1	1	1
TAL PESTICIDE - (ug/Kg)			
alpha-BHC	0.245 U	0.246 U	0.257 U
beta-BHC	0.328 U	0.33 U	0.344 U
delta-BHC	0.267 U	0.268 U	0.28 U
gamma-BHC (Lindane)	0.328 U	0.33 U	0.344 U
Heptachlor	0.141 U	0.142 U	0.148 U
Aldrin	0.174 U	0.176 U	0.183 U
Heptachlor epoxide	0.317 U	0.319 U	0.333 U
Endosulfan I	0.18 U	0.181 U	0.189 U
Dieldrin	0.148 U	0.149 U	0.156 U
4,4-DDE	**4.4 J**	**0.3699 J**	0.168 U
Endrin	0.155 U	0.156 U	0.162 U
Endosulfan II	0.115 U	0.116 U	0.121 U
4,4-DDD	**0.3335 J**	0.222 U	0.232 U
Endosulfan Sulfate	0.232 U	0.233 U	0.243 U
4,4-DDT	**2.6 J**	**5.6**	0.177 U
Methoxychlor	0.154 U	0.155 U	0.162 U
Endrin ketone	0.12 U	0.121 U	0.126 U
Endrin aldehyde	0.24 U	0.242 U	0.252 U
alpha-Chlordane	0.151 U	1.8 U	0.158 U
gamma-Chlordane	0.298 U	0.3 U	0.313 U
Toxaphene	2.1 U	2.1 U	2.2 U

U: Not Detected
J: Estimated Result
ug/kg: micrograms per kilograms

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: Pesticide-TCL

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for Pesticide-TCL.

C. Analytical Techniques:
The analysis was performed on instrument ECD_L. The front column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 7HMG017- 11 The rear column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0. 5 um df,: Catalog # 7HM-G016-17. .The analysis of Pesticide-TCLs was based on method 8081B and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for
789UMR-TP07-1218-01 [Decachlorobiphenyl(1) - 244%],
789UMR-TP11-0612-01 [Decachlorobiphenyl(1) - 301%] and
789UMR-TP11-2430-01 [Decachlorobiphenyl(1) - 187%].

The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.
The Blank Spike met requirements for all samples.

The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.

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E. Additional Comments:

The soil samples results are based on a dry weight basis.

Sample#16, 17, 18 failed for low surrogate from PB131289. Therefore sample was Re-extracted and reanalyzed from PB131321.

Sam#12 :1st column result is below MDL so form10 not generate.

F. Calculation for Concentration in Soil samples:

$$\text{Concentration ug/Kg (Dry weight basis)} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vi)\,(Ws)\,(D)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vt = Volume of the concentrated extract in uL

Vi = Volume of extract injected (uL). (If a single injection is made onto two columns, use ½ the volume in the syringe as the volume injected onto each column).
Ws = Weight of sample extracted (g).

$$D = \%\text{ dry weight or } \frac{100 - \%\text{Moisture}}{100}$$

$$GPC = \frac{Vin}{Vout} = \text{GPC factor (If no GPC is performed, GPC=1)}$$

DF = Dilution Factor

G. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:52 am, Sep 15, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	5.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061082.D	1	08/31/20 08:29	08/31/20 12:54	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.14	U	0.14	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.32	U	0.32	1.80	ug/kg
959-98-8	Endosulfan I	0.18	U	0.18	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.50	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT 1.80	~~1.40~~	~~JP~~ U	0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.15	U	0.15	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.30	U	0.30	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	17.9	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	17.3		10 - 169	86%	SPK: 20
877-09-8	Tetrachloro-m-xylene	14.8		31 - 151	74%	SPK: 20

9/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	5.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061082.D	1	08/31/20 08:29	08/31/20 12:54	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061083.D	1	08/31/20 08:29	08/31/20 13:09	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.43	~~JP~~ J	0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	0.77	~~JP~~ J	0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	18.2	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	16.7		10 - 169	83%	SPK: 20
877-09-8	Tetrachloro-m-xylene	13.8		31 - 151	69%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061083.D	1	08/31/20 08:29	08/31/20 13:09	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	6 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061086.D	1	08/31/20 08:29	08/31/20 13:52	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.20	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	0.28	~~JP~~ J	0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	18.0	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	23.1		10 - 169	115%	SPK: 20
877-09-8	Tetrachloro-m-xylene	21.7		31 - 151	108%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	6 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061086.D	1	08/31/20 08:29	08/31/20 13:52	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	4.3 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061087.D	1	08/31/20 08:29	08/31/20 14:06	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.33	U	0.33	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.33	U	0.33	1.80	ug/kg
76-44-8	Heptachlor	0.14	U	0.14	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.32	U	0.32	1.80	ug/kg
959-98-8	Endosulfan I	0.18	U	0.18	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.93	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.22	U	0.22	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.23	U	0.23	1.80	ug/kg
50-29-3	4,4-DDT	0.93	~~JP~~ J	0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.24	U	0.24	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.15	U	0.15	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.30	U	0.30	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	17.7	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	23.4		10 - 169	117%	SPK: 20
877-09-8	Tetrachloro-m-xylene	22.2		31 - 151	111%	SPK: 20

9/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	4.3 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061087.D	1	08/31/20 08:29	08/31/20 14:06	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	13.9 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061088.D	1	08/31/20 08:29	08/31/20 14:20	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.27	U	0.27	2.00	ug/kg
319-85-7	beta-BHC	0.37	U	0.37	2.00	ug/kg
319-86-8	delta-BHC	0.30	U	0.30	2.00	ug/kg
58-89-9	gamma-BHC (Lindane)	0.37	U	0.37	2.00	ug/kg
76-44-8	Heptachlor	0.16	U	0.16	2.00	ug/kg
309-00-2	Aldrin	0.20	U	0.20	2.00	ug/kg
1024-57-3	Heptachlor epoxide	0.36	U	0.36	2.00	ug/kg
959-98-8	Endosulfan I	0.20	U	0.20	2.00	ug/kg
60-57-1	Dieldrin	0.17	U	0.17	2.00	ug/kg
72-55-9	4,4-DDE	4.00		0.18	2.00	ug/kg
72-20-8	Endrin	0.17	U	0.17	2.00	ug/kg
33213-65-9	Endosulfan II	0.13	U	0.13	2.00	ug/kg
72-54-8	4,4-DDD	0.25	U	0.25	2.00	ug/kg
1031-07-8	Endosulfan Sulfate	0.26	U	0.26	2.00	ug/kg
50-29-3	4,4-DDT	2.80	~~P~~ J	0.19	2.00	ug/kg
72-43-5	Methoxychlor	0.17	U	0.17	2.00	ug/kg
53494-70-5	Endrin ketone	0.14	U	0.14	2.00	ug/kg
7421-93-4	Endrin aldehyde	0.27	U	0.27	2.00	ug/kg
5103-71-9	alpha-Chlordane	0.17	U	0.17	2.00	ug/kg
5103-74-2	gamma-Chlordane	0.34	U	0.34	2.00	ug/kg
8001-35-2	Toxaphene	2.30	U	2.30	19.7	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	14.3		10 - 169	71%	SPK: 20
877-09-8	Tetrachloro-m-xylene	14.4		31 - 151	72%	SPK: 20

9/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	13.9 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061088.D	1	08/31/20 08:29	08/31/20 14:20	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061089.D	1	08/31/20 08:29	08/31/20 14:34	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.26	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.16	U	0.16	1.80	ug/kg
72-55-9	4,4-DDE	0.22	~~J~~ J	0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	0.18	U	0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	18.3	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	48.7	*	10 - 169	244%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.6		31 - 151	103%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061089.D	1	08/31/20 08:29	08/31/20 14:34	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns.
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.1 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061090.D	1	08/31/20 08:29	08/31/20 14:48	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.20	J	0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	0.18	U	0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	18.3	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	29.9		10 - 169	149%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.2		31 - 151	101%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.1 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061090.D	1	08/31/20 08:29	08/31/20 14:48	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061091.D	1	08/31/20 08:29	08/31/20 15:02	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.26	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.16	U	0.16	1.80	ug/kg
72-55-9	4,4-DDE	19.8		0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	8.90		0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.20	U	2.20	18.4	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	20.2		10 - 169	101%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.3		31 - 151	101%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061091.D	1	08/31/20 08:29	08/31/20 15:02	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061148.D	1	09/01/20 08:30	09/01/20 18:00	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.26	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.16	U	0.16	1.80	ug/kg
72-55-9	4,4-DDE	14.6		0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	6.50		0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.20	U	2.20	18.4	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	19.3		10 - 169	96%	SPK: 20
877-09-8	Tetrachloro-m-xylene	22.0		31 - 151	110%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061148.D	1	09/01/20 08:30	09/01/20 18:00	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	4.9 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061149.D	1	09/01/20 08:30	09/01/20 18:14	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.33	U	0.33	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.33	U	0.33	1.80	ug/kg
76-44-8	Heptachlor	0.14	U	0.14	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.32	U	0.32	1.80	ug/kg
959-98-8	Endosulfan I	0.18	U	0.18	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	8.60	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.22	U	0.22	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	3.20	J	0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.24	U	0.24	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.15	U	0.15	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.30	U	0.30	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	17.9	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	60.3	*	10 - 169	301%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.1		31 - 151	101%	SPK: 20

9/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	4.9 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061149.D	1	09/01/20 08:30	09/01/20 18:14	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	3.3 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061150.D	1	09/01/20 08:30	09/01/20 18:29	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.24	U	0.24	1.80	ug/kg
319-85-7	beta-BHC	0.33	U	0.33	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.33	U	0.33	1.80	ug/kg
76-44-8	Heptachlor	0.14	U	0.14	1.80	ug/kg
309-00-2	Aldrin	0.17	U	0.17	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.32	U	0.32	1.80	ug/kg
959-98-8	Endosulfan I	0.18	U	0.18	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	4.40	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.15	U	0.15	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.33	~~J~~ J	0.22	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.23	U	0.23	1.80	ug/kg
50-29-3	4,4-DDT	2.60	J	0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.15	U	0.15	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.24	U	0.24	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.15	U	0.15	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.30	U	0.30	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	17.5	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	37.4	*	10 - 169	187%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.5		31 - 151	102%	SPK: 20

9/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	3.3 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061150.D	1	09/01/20 08:30	09/01/20 18:29	PB131321

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061133.D	1	08/31/20 08:29	09/01/20 12:32	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.25	U	0.25	1.80	ug/kg
319-85-7	beta-BHC	0.33	U	0.33	1.80	ug/kg
319-86-8	delta-BHC	0.27	U	0.27	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.33	U	0.33	1.80	ug/kg
76-44-8	Heptachlor	0.14	U	0.14	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.32	U	0.32	1.80	ug/kg
959-98-8	Endosulfan I	0.18	U	0.18	1.80	ug/kg
60-57-1	Dieldrin	0.15	U	0.15	1.80	ug/kg
72-55-9	4,4-DDE	0.37	J	0.16	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.22	U	0.22	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.23	U	0.23	1.80	ug/kg
50-29-3	4,4-DDT	5.60		0.17	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.12	U	0.12	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.24	U	0.24	1.80	ug/kg
5103-71-9	alpha-Chlordane	1.80 ~~0.51~~	~~JP~~ U	0.15	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.30	U	0.30	1.80	ug/kg
8001-35-2	Toxaphene	2.10	U	2.10	17.6	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	17.5		10 - 169	88%	SPK: 20
877-09-8	Tetrachloro-m-xylene	20.1		31 - 151	100%	SPK: 20

11/22/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061133.D	1	08/31/20 08:29	09/01/20 12:32	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061134.D	1	08/31/20 08:29	09/01/20 12:46	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
319-84-6	alpha-BHC	0.26	U	0.26	1.80	ug/kg
319-85-7	beta-BHC	0.34	U	0.34	1.80	ug/kg
319-86-8	delta-BHC	0.28	U	0.28	1.80	ug/kg
58-89-9	gamma-BHC (Lindane)	0.34	U	0.34	1.80	ug/kg
76-44-8	Heptachlor	0.15	U	0.15	1.80	ug/kg
309-00-2	Aldrin	0.18	U	0.18	1.80	ug/kg
1024-57-3	Heptachlor epoxide	0.33	U	0.33	1.80	ug/kg
959-98-8	Endosulfan I	0.19	U	0.19	1.80	ug/kg
60-57-1	Dieldrin	0.16	U	0.16	1.80	ug/kg
72-55-9	4,4-DDE	0.17	U	0.17	1.80	ug/kg
72-20-8	Endrin	0.16	U	0.16	1.80	ug/kg
33213-65-9	Endosulfan II	0.12	U	0.12	1.80	ug/kg
72-54-8	4,4-DDD	0.23	U	0.23	1.80	ug/kg
1031-07-8	Endosulfan Sulfate	0.24	U	0.24	1.80	ug/kg
50-29-3	4,4-DDT	0.18	U	0.18	1.80	ug/kg
72-43-5	Methoxychlor	0.16	U	0.16	1.80	ug/kg
53494-70-5	Endrin ketone	0.13	U	0.13	1.80	ug/kg
7421-93-4	Endrin aldehyde	0.25	U	0.25	1.80	ug/kg
5103-71-9	alpha-Chlordane	0.16	U	0.16	1.80	ug/kg
5103-74-2	gamma-Chlordane	0.31	U	0.31	1.80	ug/kg
8001-35-2	Toxaphene	2.20	U	2.20	18.4	ug/kg
SURROGATES						
2051-24-3	Decachlorobiphenyl	20.4		10 - 169	102%	SPK: 20
877-09-8	Tetrachloro-m-xylene	22.7		31 - 151	114%	SPK: 20

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8081	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Pesticide-TCL
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061134.D	1	08/31/20 08:29	09/01/20 12:46	PB131289

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
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J = Estimated Value
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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**

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LAB CHRONICLE

			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	

TAL Polychlorinated biphenyls (PCBs) Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:A1:O8A25AA1:O7+A1:U8	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09
Sample weight (g)	30.05	30.07	30.09	30.06
Percent Moisture	5.4	7	6	4.3
Dilution Factor	1	1	1	1
TAL PCBs - (ug/Kg)				
Aroclor-1016	4.3 U	4.4 U	4.3 U	4.2 U
Aroclor-1221	7 U	7.1 U	7.1 U	6.9 U
Aroclor-1232	4.8 U	4.9 U	4.8 U	4.7 U
Aroclor-1242	6.1 U	6.2 U	6.2 U	6.1 U
Aroclor-1248	6.4 U	6.5 U	6.4 U	6.3 U
Aroclor-1254	**23.8 J**	7.1 U	7 U	6.9 U
Aroclor-1262	4.3 U	4.4 U	4.3 U	4.3 U
Aroclor-1268	4.1 U	4.1 U	4.1 U	4 U
Aroclor-1260	3 U	3 U	3 U	3 U

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01
Lab sample ID No.:	L3837-13	L3837-16	L3837-17	L3837-18
Sample weight (g)	30.07	30.09	30.05	30.07
Percent Moisture	7.8	7.7	4.9	3.3
Dilution Factor	1	1	1	1
TAL PCBs - (ug/Kg)				
Aroclor-1016	4.4 U	4.4 U	4.3 U	4.2 U
Aroclor-1221	7.2 U	7.2 U	7 U	6.9 U
Aroclor-1232	4.9 U	4.9 U	4.8 U	4.7 U
Aroclor-1242	6.3 U	6.3 U	6.1 U	6 U
Aroclor-1248	6.5 U	6.5 U	6.3 U	6.2 U
Aroclor-1254	7.1 U	7.1 U	6.9 U	6.8 U
Aroclor-1262	4.4 U	4.4 U	4.3 U	4.2 U
Aroclor-1268	4.2 U	4.2 U	4.1 U	4 U
Aroclor-1260	3.1 U	3.1 U	3 U	2.9 U

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected
J: Estimated Result
ug/Kg: Micrograms per kilograms

TAL Polychlorinated biphenyls (PCBs) Summary Table
789 Upper Mountain Road Site
Lewiston, NIagara County, New York
August 25-26, 2020

Matrix:A1:O8A25AA1:O7+A1:U8	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01
Lab sample ID No.:	L3837-10	L3837-11	L3837-12
Sample weight (g)	30.04	30.08	30.05
Percent Moisture	13.9	7.4	7.1
Dilution Factor	1	1	1
TAL PCBs - (ug/Kg)			
Aroclor-1016	4.7 U	4.4 U	4.4 U
Aroclor-1221	7.7 U	7.2 U	7.1 U
Aroclor-1232	5.3 U	4.9 U	4.9 U
Aroclor-1242	6.7 U	6.3 U	6.2 U
Aroclor-1248	7 U	6.5 U	6.5 U
Aroclor-1254	7.6 U	7.1 U	7.1 U
Aroclor-1262	4.7 U	4.4 U	4.4 U
Aroclor-1268	4.5 U	4.2 U	4.1 U
Aroclor-1260	**13.9 J**	3.1 U	3.1 U

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-19	L3837-20
Sample weight (g)	30.04	30.06
Percent Moisture	3.8	7.7
Dilution Factor	1	1
TAL PCBs - (ug/Kg)		
Aroclor-1016	4.2 U	4.4 U
Aroclor-1221	6.9 U	7.2 U
Aroclor-1232	4.7 U	4.9 U
Aroclor-1242	6 U	6.3 U
Aroclor-1248	6.3 U	6.5 U
Aroclor-1254	6.8 U	7.1 U
Aroclor-1262	4.2 U	4.4 U
Aroclor-1268	4 U	4.2 U
Aroclor-1260	2.9 U	3.1 U

U: Not Detected
J: Estimated Result
ug/Kg: Micrograms per kilograms

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: PCB

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL +CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for PCB.

C. Analytical Techniques:
The analyses were performed on instrument GCECD_Q.The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analyses were performed on instrument GCECD_O. The front column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0.5 um df, Catalogue # 7HM-G016-17. The rear column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 µm; Catalogue # 7HM-G017-11.The analysis of PCBs was based on method 8082A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria except for
789UMR-TP05-0612-01 [Decachlorobiphenyl(1) - 132%],
789UMR-TP05-1824-01 [Decachlorobiphenyl(1) - 126%],
789UMR-TP05-3036-01 [Decachlorobiphenyl(1) - 129%] and
789UMR-TP11-2430-01 [Tetrachloro-m-xylene(1) - 167%].As per method, two surrogates per column are allowed to be fail, therefore no further corrective action was taken.

The Retention Times were acceptable for all samples.
The MS {L3837-14MS} with File ID: PQ049628.D recoveries met the requirements for all compounds except for AR1260[166%].
The MSD {L3837-15MSD} with File ID: PQ049629.D recoveries met the acceptable requirements except for AR1260[222%].
The RPD for {L3837-15MSD} with File ID: PQ049629.D met criteria except for AR1260[29%].
The Blank Spike met requirements for all samples.

The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration met the requirements.

E. Additional Comments:
The soil samples results are based on a dry weight basis.

Sample#16, 17, 18 failed for low surrogate from PB131288. Therefore sample was Re-extracted and reanalyzed from PB131324.

F. Calculation for Concentration in Soil samples:

$$\text{Concentration ug/Kg (Dry weight basis)} = \frac{(Ax)\,(Vt)\,(DF)\,(GPC)}{(CF)\,(Vi)\,(Ws)\,(D)}$$

Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vt = Volume of the concentrated extract in uL

Vi = Volume of extract injected (uL). (If a single injection is made onto two columns, use ½ the volume in the syringe as the volume injected onto each column).
Ws = Weight of sample extracted (g).

$$D = \%\text{ dry weight or } \frac{100 - \%\text{Moisture}}{100}$$

$$GPC = \frac{Vin}{Vout} = \text{GPC factor (If no GPC is performed, GPC=1)}$$

DF = Dilution Factor

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:53 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	5.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049620.D	1	08/31/20 08:28	08/31/20 12:14	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.30	U	4.30	17.9	ug/kg
11104-28-2	Aroclor-1221	7.00	U	7.00	17.9	ug/kg
11141-16-5	Aroclor-1232	4.80	U	4.80	17.9	ug/kg
53469-21-9	Aroclor-1242	6.10	U	6.10	17.9	ug/kg
12672-29-6	Aroclor-1248	6.40	U	6.40	17.9	ug/kg
11097-69-1	Aroclor-1254	23.8	J	7.00	17.9	ug/kg
37324-23-5	Aroclor-1262	4.30	U	4.30	17.9	ug/kg
11100-14-4	Aroclor-1268	4.10	U	4.10	17.9	ug/kg
11096-82-5	Aroclor-1260	3.00	U	3.00	17.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	26.4		10 - 166	132%	SPK: 20
2051-24-3	Decachlorobiphenyl	26.4	*	60 - 125	132%	SPK: 20

9/23/2020.

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049621.D	1	08/31/20 08:28	08/31/20 12:30	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.2	ug/kg
11104-28-2	Aroclor-1221	7.10	U	7.10	18.2	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.2	ug/kg
53469-21-9	Aroclor-1242	6.20	U	6.20	18.2	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.2	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.2	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.2	ug/kg
11100-14-4	Aroclor-1268	4.10	U	4.10	18.2	ug/kg
11096-82-5	Aroclor-1260	3.00	U	3.00	18.2	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	25.2		10 - 166	126%	SPK: 20
2051-24-3	Decachlorobiphenyl	24.3		60 - 125	122%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	6 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049622.D	1	08/31/20 08:28	08/31/20 12:46	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.30	U	4.30	18.0	ug/kg
11104-28-2	Aroclor-1221	7.10	U	7.10	18.0	ug/kg
11141-16-5	Aroclor-1232	4.80	U	4.80	18.0	ug/kg
53469-21-9	Aroclor-1242	6.20	U	6.20	18.0	ug/kg
12672-29-6	Aroclor-1248	6.40	U	6.40	18.0	ug/kg
11097-69-1	Aroclor-1254	7.00	U	7.00	18.0	ug/kg
37324-23-5	Aroclor-1262	4.30	U	4.30	18.0	ug/kg
11100-14-4	Aroclor-1268	4.10	U	4.10	18.0	ug/kg
11096-82-5	Aroclor-1260	3.00	U	3.00	18.0	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	24.9		10 - 166	125%	SPK: 20
2051-24-3	Decachlorobiphenyl	25.2	*	60 - 125	126%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4.3 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049623.D	1	08/31/20 08:28	08/31/20 13:03	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.20	U	4.20	17.7	ug/kg
11104-28-2	Aroclor-1221	6.90	U	6.90	17.7	ug/kg
11141-16-5	Aroclor-1232	4.70	U	4.70	17.7	ug/kg
53469-21-9	Aroclor-1242	6.10	U	6.10	17.7	ug/kg
12672-29-6	Aroclor-1248	6.30	U	6.30	17.7	ug/kg
11097-69-1	Aroclor-1254	6.90	U	6.90	17.7	ug/kg
37324-23-5	Aroclor-1262	4.30	U	4.30	17.7	ug/kg
11100-14-4	Aroclor-1268	4.00	U	4.00	17.7	ug/kg
11096-82-5	Aroclor-1260	3.00	U	3.00	17.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	27.8		10 - 166	139%	SPK: 20
2051-24-3	Decachlorobiphenyl	25.7	*	60 - 125	129%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	13.9 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049624.D	1	08/31/20 08:28	08/31/20 13:19	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.70	U	4.70	19.7	ug/kg
11104-28-2	Aroclor-1221	7.70	U	7.70	19.7	ug/kg
11141-16-5	Aroclor-1232	5.30	U	5.30	19.7	ug/kg
53469-21-9	Aroclor-1242	6.70	U	6.70	19.7	ug/kg
12672-29-6	Aroclor-1248	7.00	U	7.00	19.7	ug/kg
11097-69-1	Aroclor-1254	7.60	U	7.60	19.7	ug/kg
37324-23-5	Aroclor-1262	4.70	U	4.70	19.7	ug/kg
11100-14-4	Aroclor-1268	4.50	U	4.50	19.7	ug/kg
11096-82-5	Aroclor-1260	13.9	J	3.30	19.7	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	26.8		10 - 166	134%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.5		60 - 125	113%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7.4 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049625.D	1	08/31/20 08:28	08/31/20 13:35	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.3	ug/kg
11104-28-2	Aroclor-1221	7.20	U	7.20	18.3	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.3	ug/kg
53469-21-9	Aroclor-1242	6.30	U	6.30	18.3	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.3	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.3	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.3	ug/kg
11100-14-4	Aroclor-1268	4.20	U	4.20	18.3	ug/kg
11096-82-5	Aroclor-1260	3.10	U	3.10	18.3	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	24.1		10 - 166	120%	SPK: 20
2051-24-3	Decachlorobiphenyl	23.0		60 - 125	115%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7.1 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049626.D	1	08/31/20 08:28	08/31/20 13:52	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.3	ug/kg
11104-28-2	Aroclor-1221	7.10	U	7.10	18.3	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.3	ug/kg
53469-21-9	Aroclor-1242	6.20	U	6.20	18.3	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.3	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.3	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.3	ug/kg
11100-14-4	Aroclor-1268	4.10	U	4.10	18.3	ug/kg
11096-82-5	Aroclor-1260	3.10	U	3.10	18.3	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	23.0		10 - 166	115%	SPK: 20
2051-24-3	Decachlorobiphenyl	22.7		60 - 125	113%	SPK: 20

Comments:

U = Not Detected
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MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
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J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049627.D	1	08/31/20 08:28	08/31/20 14:08	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.4	ug/kg
11104-28-2	Aroclor-1221	7.20	U	7.20	18.4	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.4	ug/kg
53469-21-9	Aroclor-1242	6.30	U	6.30	18.4	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.4	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.4	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.4	ug/kg
11100-14-4	Aroclor-1268	4.20	U	4.20	18.4	ug/kg
11096-82-5	Aroclor-1260	3.10	U	3.10	18.4	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	21.7		10 - 166	109%	SPK: 20
2051-24-3	Decachlorobiphenyl	19.9		60 - 125	99%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
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E = Value Exceeds Calibration Range
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Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049657.D	1	09/01/20 10:15	09/01/20 18:07	PB131324

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.4	ug/kg
11104-28-2	Aroclor-1221	7.20	U	7.20	18.4	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.4	ug/kg
53469-21-9	Aroclor-1242	6.30	U	6.30	18.4	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.4	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.4	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.4	ug/kg
11100-14-4	Aroclor-1268	4.20	U	4.20	18.4	ug/kg
11096-82-5	Aroclor-1260	3.10	U	3.10	18.4	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	29.9		10 - 166	149%	SPK: 20
2051-24-3	Decachlorobiphenyl	20.3		60 - 125	101%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	4.9 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049658.D	1	09/01/20 10:15	09/01/20 18:24	PB131324

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.30	U	4.30	17.9	ug/kg
11104-28-2	Aroclor-1221	7.00	U	7.00	17.9	ug/kg
11141-16-5	Aroclor-1232	4.80	U	4.80	17.9	ug/kg
53469-21-9	Aroclor-1242	6.10	U	6.10	17.9	ug/kg
12672-29-6	Aroclor-1248	6.30	U	6.30	17.9	ug/kg
11097-69-1	Aroclor-1254	6.90	U	6.90	17.9	ug/kg
37324-23-5	Aroclor-1262	4.30	U	4.30	17.9	ug/kg
11100-14-4	Aroclor-1268	4.10	U	4.10	17.9	ug/kg
11096-82-5	Aroclor-1260	3.00	U	3.00	17.9	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	23.5		10 - 166	118%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.4		60 - 125	107%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.3 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PQ049659.D	1	09/01/20 10:15	09/01/20 18:40	PB131324

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.20	U	4.20	17.5	ug/kg
11104-28-2	Aroclor-1221	6.90	U	6.90	17.5	ug/kg
11141-16-5	Aroclor-1232	4.70	U	4.70	17.5	ug/kg
53469-21-9	Aroclor-1242	6.00	U	6.00	17.5	ug/kg
12672-29-6	Aroclor-1248	6.20	U	6.20	17.5	ug/kg
11097-69-1	Aroclor-1254	6.80	U	6.80	17.5	ug/kg
37324-23-5	Aroclor-1262	4.20	U	4.20	17.5	ug/kg
11100-14-4	Aroclor-1268	4.00	U	4.00	17.5	ug/kg
11096-82-5	Aroclor-1260	2.90	U	2.90	17.5	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	33.3	*	10 - 166	167%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.6		60 - 125	108%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO071036.D	1	08/31/20 08:28	08/31/20 15:02	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.20	U	4.20	17.6	ug/kg
11104-28-2	Aroclor-1221	6.90	U	6.90	17.6	ug/kg
11141-16-5	Aroclor-1232	4.70	U	4.70	17.6	ug/kg
53469-21-9	Aroclor-1242	6.00	U	6.00	17.6	ug/kg
12672-29-6	Aroclor-1248	6.30	U	6.30	17.6	ug/kg
11097-69-1	Aroclor-1254	6.80	U	6.80	17.6	ug/kg
37324-23-5	Aroclor-1262	4.20	U	4.20	17.6	ug/kg
11100-14-4	Aroclor-1268	4.00	U	4.00	17.6	ug/kg
11096-82-5	Aroclor-1260	2.90	U	2.90	17.6	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	25.0		10 - 166	125%	SPK: 20
2051-24-3	Decachlorobiphenyl	21.2		60 - 125	106%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8082A	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	PCB
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PO071037.D	1	08/31/20 08:28	08/31/20 15:19	PB131288

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
12674-11-2	Aroclor-1016	4.40	U	4.40	18.4	ug/kg
11104-28-2	Aroclor-1221	7.20	U	7.20	18.4	ug/kg
11141-16-5	Aroclor-1232	4.90	U	4.90	18.4	ug/kg
53469-21-9	Aroclor-1242	6.30	U	6.30	18.4	ug/kg
12672-29-6	Aroclor-1248	6.50	U	6.50	18.4	ug/kg
11097-69-1	Aroclor-1254	7.10	U	7.10	18.4	ug/kg
37324-23-5	Aroclor-1262	4.40	U	4.40	18.4	ug/kg
11100-14-4	Aroclor-1268	4.20	U	4.20	18.4	ug/kg
11096-82-5	Aroclor-1260	3.10	U	3.10	18.4	ug/kg
SURROGATES						
877-09-8	Tetrachloro-m-xylene	32.6		10 - 166	163%	SPK: 20
2051-24-3	Decachlorobiphenyl	24.1		60 - 125	121%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/02/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04RE	**789UMR-DSP01-02RE**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/02/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-05RE	**789UMR-DSP02-01RE**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	

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LAB CHRONICLE

			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		09/01/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		09/01/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	

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LAB CHRONICLE

L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		09/01/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	

Herbicides Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09	L3837-10
Sample weight (g)	30.07	30.04	30.06	30.08	30.05
Percent Moisture	5.4	7	6	4.3	13.9
Dilution Factor	1	1	1	1	1
HERBICIDES - (ug/Kg)					
DICAMBA	9.6 U	9.7 U	9.6 U	9.4 U	10.5 U
DICHLORPROP	13.9 U	14.2 U	14 U	13.8 U	15.3 U
2,4-D	25.9 U	26.4 U	26.1 U	25.6 U	28.5 U
2,4,5-TP (Silvex)	10.8 U	11 U	10.9 U	10.7 U	11.9 U
2,4,5-T	13.1 U	13.3 U	13.2 U	12.9 U	14.4 U
2,4-DB	19.3 U	19.7 U	19.5 U	19.1 U	21.2 U
DINOSEB	18.9 U	19.2 U	19 U	18.7 U	20.8 U

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01
Lab sample ID No.:	L3837-11	L3837-12	L3837-13	L3837-16	L3837-17
Sample weight (g)	30.09	30.05	30.04	30.04	30.06
Percent Moisture	7.4	7.1	7.8	7.7	4.9
Dilution Factor	1	1	1	1	1
HERBICIDES - (ug/Kg)					
DICAMBA	9.8 U	9.7 U	9.8 UJ	9.8 UJ	9.5 U
DICHLORPROP	14.2 U	14.2 U	14.3 U	14.3 U	13.9 U
2,4-D	26.4 U	26.4 U	26.6 U	26.6 U	25.8 U
2,4,5-TP (Silvex)	11.1 U	11 U	11.1 U	11.1 U	10.8 U
2,4,5-T	13.3 U	13.3 U	13.4 U	13.4 U	13 U
2,4-DB	19.7 U	19.7 U	19.8 U	19.8 U	19.2 U
DINOSEB	19.3 U	19.2 U	19.4 U	19.4 U	18.8 U

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

Herbicides Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-2430-01	789UMR-TP12-0002-01
Lab sample ID No.:	L3837-18	L3837-19
Sample weight (g)	30.05	30.08
Percent Moisture	3.3	3.8
Dilution Factor	1	1
HERBICIDES - (ug/Kg)		
DICAMBA	9.4 U	9.4 U
DICHLORPROP	13.7 U	13.7 U
2,4-D	25.4 U	25.5 U
2,4,5-TP (Silvex)	10.6 U	10.7 U
2,4,5-T	12.8 U	12.9 U
2,4-DB	18.9 U	19 U
DINOSEB	18.5 U	18.6 U

Matrix:	Soil/Rock/Slag
START V Sample No.:	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-20
Sample weight (g)	30.06
Percent Moisture	7.7
Dilution Factor	1
HERBICIDES - (ug/Kg)	
DICAMBA	9.8 U
DICHLORPROP	14.3 U
2,4-D	26.6 U
2,4,5-TP (Silvex)	11.1 U
2,4,5-T	13.4 U
2,4-DB	19.8 U
DINOSEB	19.4 U

U: Not Detected

J: Estimated Result

ug/Kg: Micrograms per kilograms

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: Herbicide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for Herbicide.

C. Analytical Techniques:
The analysis was performed on instrument ECD_S. The front column is RTX-CLPesticides which is 30 meters, 0.32 mm ID, 0. 5 um df,: Catalog # 11139. The rear column is RTX-CLPesticides2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 11324The analysis of Herbicides was based on method 8151A and extraction was done based on method 3541.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.

The MS {L3837-14MS} with File ID: PS012011.D recoveries met the requirements for all compounds except for DICAMBA[26%] due to sample matrix interference.

The MS {L3876-13MS} with File ID: PS012132.D recoveries met the requirements for all compounds except for DICAMBA[26%] due to sample matrix interference.

The MSD {L3837-15MSD} with File ID: PS012012.D recoveries met the acceptable requirements except for DICAMBA[33%] due to sample matrix interference.

The MSD {L3876-13MSD} with File ID: PS012133.D recoveries met the acceptable requirements except for DICAMBA[26%] due to sample matrix interference.

The RPD for {L3837-15MSD} with File ID: PS012012.D met criteria except for 2,4,5-T[31%], 2,4,5-TP(Silvex)[28%], 2,4-D[25%], 2,4-DB[21%] and DICAMBA[24%] .

The Blank Spike met requirements for all samples .
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:
The soil samples results are based on a dry weight basis.

F. Calculation for Concentration in Soil samples:

$$ug/Kg = \frac{(Ax)\,(Vt)\,(MW)}{(ICF)\,(Vi)\,(Ws)\,(D)} \quad X\ DF$$

Where: Ax = Area for the parameter to be measured.
ICF = average calibration factor for the calibration standards.
Vt = Volume of total extract in uL (Take into account dilutions)
Is = Amount of standard injected in nanograms (ng)
Vi = Volume of extract injected.
Ws = Weight of sample extracted (g).

$$D = \frac{100 - \%\ Moisture}{100}$$

MW = molecular weight of the compound

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:54 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	5.4 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012001.D	1	08/31/20 09:10	09/01/20 12:51	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.60	U	9.60	70.7	ug/Kg
120-36-5	DICHLORPROP	13.9	U	13.9	70.7	ug/Kg
94-75-7	2,4-D	25.9	U	25.9	70.7	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.8	U	10.8	70.7	ug/Kg
93-76-5	2,4,5-T	13.1	U	13.1	70.7	ug/Kg
94-82-6	2,4-DB	19.3	U	19.3	70.7	ug/Kg
88-85-7	DINOSEB	18.9	U	18.9	70.7	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	218		12 - 189	44%	SPK: 500

Comments:

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Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012002.D	1	08/31/20 09:10	09/01/20 13:14	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.70	U	9.70	71.9	ug/Kg
120-36-5	DICHLORPROP	14.2	U	14.2	71.9	ug/Kg
94-75-7	2,4-D	26.4	U	26.4	71.9	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.0	U	11.0	71.9	ug/Kg
93-76-5	2,4,5-T	13.3	U	13.3	71.9	ug/Kg
94-82-6	2,4-DB	19.7	U	19.7	71.9	ug/Kg
88-85-7	DINOSEB	19.2	U	19.2	71.9	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	101		12 - 189	20%	SPK: 500

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	6 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012003.D	1	08/31/20 09:10	09/01/20 13:37	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.60	U	9.60	71.1	ug/Kg
120-36-5	DICHLORPROP	14.0	U	14.0	71.1	ug/Kg
94-75-7	2,4-D	26.1	U	26.1	71.1	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.9	U	10.9	71.1	ug/Kg
93-76-5	2,4,5-T	13.2	U	13.2	71.1	ug/Kg
94-82-6	2,4-DB	19.5	U	19.5	71.1	ug/Kg
88-85-7	DINOSEB	19.0	U	19.0	71.1	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	266		12 - 189	53%	SPK: 500

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	4.3 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012018.D	1	08/31/20 09:10	09/01/20 19:21	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.40	U	9.40	69.8	ug/Kg
120-36-5	DICHLORPROP	13.8	U	13.8	69.8	ug/Kg
94-75-7	2,4-D	25.6	U	25.6	69.8	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.7	U	10.7	69.8	ug/Kg
93-76-5	2,4,5-T	12.9	U	12.9	69.8	ug/Kg
94-82-6	2,4-DB	19.1	U	19.1	69.8	ug/Kg
88-85-7	DINOSEB	18.7	U	18.7	69.8	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	272		12 - 189	54%	SPK: 500

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
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() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	13.9 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012005.D	1	08/31/20 09:10	09/01/20 14:23	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	10.5	U	10.5	77.7	ug/Kg
120-36-5	DICHLORPROP	15.3	U	15.3	77.7	ug/Kg
94-75-7	2,4-D	28.5	U	28.5	77.7	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.9	U	11.9	77.7	ug/Kg
93-76-5	2,4,5-T	14.4	U	14.4	77.7	ug/Kg
94-82-6	2,4-DB	21.2	U	21.2	77.7	ug/Kg
88-85-7	DINOSEB	20.8	U	20.8	77.7	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	230		12 - 189	46%	SPK: 500

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M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7.4 Decanted:
Sample Wt/Vol:	30.09 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012006.D	1	08/31/20 09:10	09/01/20 14:46	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.80	U	9.80	72.1	ug/Kg
120-36-5	DICHLORPROP	14.2	U	14.2	72.1	ug/Kg
94-75-7	2,4-D	26.4	U	26.4	72.1	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.1	U	11.1	72.1	ug/Kg
93-76-5	2,4,5-T	13.3	U	13.3	72.1	ug/Kg
94-82-6	2,4-DB	19.7	U	19.7	72.1	ug/Kg
88-85-7	DINOSEB	19.3	U	19.3	72.1	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	249		12 - 189	50%	SPK: 500

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7.1 Decanted:
Sample Wt/Vol:	30.07 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012009.D	1	08/31/20 09:10	09/01/20 15:55	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.70	U	9.70	72.0	ug/Kg
120-36-5	DICHLORPROP	14.2	U	14.2	72.0	ug/Kg
94-75-7	2,4-D	26.4	U	26.4	72.0	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.0	U	11.0	72.0	ug/Kg
93-76-5	2,4,5-T	13.3	U	13.3	72.0	ug/Kg
94-82-6	2,4-DB	19.7	U	19.7	72.0	ug/Kg
88-85-7	DINOSEB	19.2	U	19.2	72.0	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	200		12 - 189	40%	SPK: 500

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7.8 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012010.D	1	08/31/20 09:10	09/01/20 16:17	PB131290

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.80	U J	9.80	72.6	ug/Kg
120-36-5	DICHLORPROP	14.3	U	14.3	72.6	ug/Kg
94-75-7	2,4-D	26.6	U	26.6	72.6	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.1	U	11.1	72.6	ug/Kg
93-76-5	2,4,5-T	13.4	U	13.4	72.6	ug/Kg
94-82-6	2,4-DB	19.8	U	19.8	72.6	ug/Kg
88-85-7	DINOSEB	19.4	U	19.4	72.6	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	200		12 - 189	40%	SPK: 500

9/24/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.04 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012091.D	1	09/02/20 09:10	09/03/20 16:45	PB131357

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.80	U J	9.80	72.5	ug/Kg
120-36-5	DICHLORPROP	14.3	U	14.3	72.5	ug/Kg
94-75-7	2,4-D	26.6	U	26.6	72.5	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.1	U	11.1	72.5	ug/Kg
93-76-5	2,4,5-T	13.4	U	13.4	72.5	ug/Kg
94-82-6	2,4-DB	19.8	U	19.8	72.5	ug/Kg
88-85-7	DINOSEB	19.4	U	19.4	72.5	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	318		12 - 189	64%	SPK: 500

7/21/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	4.9 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012092.D	1	09/02/20 09:10	09/03/20 17:09	PB131357

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.50	U	9.50	70.3	ug/Kg
120-36-5	DICHLORPROP	13.9	U	13.9	70.3	ug/Kg
94-75-7	2,4-D	25.8	U	25.8	70.3	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.8	U	10.8	70.3	ug/Kg
93-76-5	2,4,5-T	13.0	U	13.0	70.3	ug/Kg
94-82-6	2,4-DB	19.2	U	19.2	70.3	ug/Kg
88-85-7	DINOSEB	18.8	U	18.8	70.3	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	243		12 - 189	49%	SPK: 500

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	3.3 Decanted:
Sample Wt/Vol:	30.05 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012093.D	1	09/02/20 09:10	09/03/20 17:32	PB131357

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.40	U	9.40	69.2	ug/Kg
120-36-5	DICHLORPROP	13.7	U	13.7	69.2	ug/Kg
94-75-7	2,4-D	25.4	U	25.4	69.2	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.6	U	10.6	69.2	ug/Kg
93-76-5	2,4,5-T	12.8	U	12.8	69.2	ug/Kg
94-82-6	2,4-DB	18.9	U	18.9	69.2	ug/Kg
88-85-7	DINOSEB	18.5	U	18.5	69.2	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	203		12 - 189	41%	SPK: 500

Comments:

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LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	3.8 Decanted:
Sample Wt/Vol:	30.08 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012094.D	1	09/02/20 09:10	09/03/20 17:55	PB131357

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.40	U	9.40	69.5	ug/Kg
120-36-5	DICHLORPROP	13.7	U	13.7	69.5	ug/Kg
94-75-7	2,4-D	25.5	U	25.5	69.5	ug/Kg
93-72-1	2,4,5-TP (Silvex)	10.7	U	10.7	69.5	ug/Kg
93-76-5	2,4,5-T	12.9	U	12.9	69.5	ug/Kg
94-82-6	2,4-DB	19.0	U	19.0	69.5	ug/Kg
88-85-7	DINOSEB	18.6	U	18.6	69.5	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	286		12 - 189	57%	SPK: 500

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Analytical Method:	SW8151A	% Moisture:	7.7 Decanted:
Sample Wt/Vol:	30.06 Units: g	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012095.D	1	09/02/20 09:10	09/03/20 18:18	PB131357

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units(Dry Weight)
TARGETS						
1918-00-9	DICAMBA	9.80	U	9.80	72.4	ug/Kg
120-36-5	DICHLORPROP	14.3	U	14.3	72.4	ug/Kg
94-75-7	2,4-D	26.6	U	26.6	72.4	ug/Kg
93-72-1	2,4,5-TP (Silvex)	11.1	U	11.1	72.4	ug/Kg
93-76-5	2,4,5-T	13.4	U	13.4	72.4	ug/Kg
94-82-6	2,4-DB	19.8	U	19.8	72.4	ug/Kg
88-85-7	DINOSEB	19.4	U	19.4	72.4	ug/Kg
SURROGATES						
19719-28-9	2,4-DCAA	255		12 - 189	51%	SPK: 500

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**

LAB CHRONICLE

			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	08/31/20	

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LAB CHRONICLE

			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	

TAL Metals Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09
Mercury Sample weight (g)	0.55	0.52	0.59	0.52
Metals Sample weight (g)	2.44	2.42	2.37	2.35
Percent Solids	94.6	93	94	95.7
Dilution Factor	1	1	1	1, *2
TAL METALS (Mg/Kg)				
Aluminum	**2210**	**3130**	**406**	**358**
Antimony	**0.976 J**	**0.738 J-**	0.406 U	0.403 U
Arsenic	**2.64**	**2.95**	**7.95**	**5.54**
Barium	**3160**	**2380**	**98.3**	**116**
Beryllium	**0.141 J+**	**0.211 J+**	0.066 U	0.065 U
Cadmium	**0.555**	**0.631**	**0.178 J**	**0.149 J**
Calcium	**3110**	**4440**	**484**	**441**
Chromium	**27.8**	**17.9**	**2.79**	**3.33**
Cobalt	**7.88**	**7.65**	**0.778 J**	**0.848 J**
Copper	**46**	**78**	**4.49**	**3.85**
Iron	**5780**	**7710**	**795**	**847**
Lead	**30.6**	**32.8**	**16.4**	**13**
Magnesium	**1330**	**1650**	**196**	**154**
Manganese	**501**	**340**	**24.9**	**29.3**
Nickel	**15.6**	**15**	**2.23**	**1.82**
Potassium	**228**	**337**	**50.2 J**	**37.7 J**
Selenium	0.316 U	0.324 U	0.327 U	0.324 U
Silver	**3.92**	**3.88**	0.144 U	0.143 U
Sodium	**35.3 J**	**37.6 J**	18.5 U	18.4 U
Thallium	0.422 U	0.432 U	0.437 U	0.433 U
Vanadium	**11.9**	**10.61**	**1.66 J**	**1.82**
Zinc	**75.2**	**117**	**12.8**	**10.59**
Mercury	**0.068**	**0.172**	**0.06**	***0.78**

U: Not Detected
J: Estimated Result
J+ - estimated value for potential high bias
J- - estimated value for potential low bias
Mg/Kg: Milligrams per kilogram

TAL Metals Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP06-0006-01	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01
Lab sample ID No.:	L3837-10	L3837-11	L3837-12	L3837-13
Mercury Sample weight (g)	0.55	0.52	0.56	0.55
Metals Sample weight (g)	2.36	2.35	2.39	2.37
Percent Solids	86.1	92.6	92.9	92.2
Dilution Factor	1	1	1	1
TAL METALS (Mg/Kg)				
Aluminum	**9070**	**10500**	**7120**	**4820 J**
Antimony	0.446 UJ	0.416 UJ	0.408 UJ	0.414 UJ
Arsenic	**4.35**	**2.67**	**2.78**	**5.53 J**
Barium	**67.3**	**46.2**	**73.2**	**93.9**
Beryllium	**0.498**	**0.462**	**0.365**	**0.25 J**
Cadmium	**0.895**	**0.533**	**1.08**	**0.693**
Calcium	**3530**	**3920**	**36300**	**1800**
Chromium	**14.2**	**11.6**	**10.09**	**12.2 J**
Cobalt	**11**	**7.78**	**8.56**	**5.19**
Copper	**23.9**	**8.87**	**13.5**	**42.9 J-**
Iron	**14400**	**13600**	**12800**	**7470 J**
Lead	**58.6**	**13.9**	**7.46**	**34**
Magnesium	**3290**	**2870**	**6030**	**1510**
Manganese	**345**	**301**	**474**	**329 J**
Nickel	**18.9**	**12.8**	**16.6**	**12.2**
Potassium	**637**	**564**	**905**	**558**
Selenium	0.359 U	0.335 U	0.328 U	0.334 UJ
Silver	**1.38**	**1.25**	**1.2**	**0.359 J**
Sodium	**45 J**	**80.6 J**	**86.6 J**	**26.7 J**
Thallium	**1.41 J**	**1.15 J**	**0.941 J**	0.445 U
Vanadium	**16.2**	**16.8**	**12.9**	**10.32 J**
Zinc	**98.2**	**40.8**	**34.8**	**64.4 J**
Mercury	**0.319**	**0.048**	**0.027**	**0.122**

U: Not Detected
J: Estimated Result

J+ - estimated value for potential high bias

J- - estimated value for potential low bias

Mg/Kg: Milligrams per kilogram

TAL Metals Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01	789UMR-TP11-2430-01	789UMR-TP12-0002-01
Lab sample ID No.:	L3837-16	L3837-17	L3837-18	L3837-19
Mercury Sample weight (g)	0.56	0.51	0.56	0.5
Metals Sample weight (g)	2.33	2.43	2.41	2.35
Percent Solids	92.3	95.1	96.7	96.2
Dilution Factor	1	1	1	1
TAL METALS (Mg/Kg)				
Aluminum	**3730 J**	**2140**	**1640**	**1300**
Antimony	0.421 UJ	0.392 U	0.389 U	0.4 U
Arsenic	**6.06 J**	**6.67**	**5.07**	**6.83**
Barium	**64.6**	**43.2**	**63.8**	**19.6**
Beryllium	**0.202 J+**	**0.109 J**	**0.089 J**	**0.07 J**
Cadmium	**0.67**	**0.538**	**0.331**	**0.807**
Calcium	**1500**	**908**	**869**	**714**
Chromium	**9.62 J**	**5.63**	**6.26**	**2.73**
Cobalt	**4.48**	**3**	**2.31**	**2.02**
Copper	**13.6 J-**	**10.81**	**13.8**	**4.43**
Iron	**6000 J**	**3250**	**2910**	**2260**
Lead	**32.4**	**24.6**	**20.7**	**15.5**
Magnesium	**1170**	**667**	**560**	**439**
Manganese	**273 J**	**152**	**128**	**114**
Nickel	**10.48**	**6.92**	**5.87**	**3.37**
Potassium	**451**	**257**	**178**	**134**
Selenium	0.339 UJ	0.315 U	0.313 U	0.322 U
Silver	0.15 UJ	0.139 U	0.138 U	0.142 U
Sodium	**23.7 J**	17.9 U	**29.1 J**	18.3 U
Thallium	0.452 U	0.421 U	0.418 U	0.43 U
Vanadium	**8.59 J**	**4.93**	**4.49**	**3.08**
Zinc	**52.9 J**	**31.6**	**31.6**	**16.8**
Mercury	**0.105**	**0.076**	**0.078**	**0.04**

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected

J: Estimated Result

J+ - estimated value for potential high bias

J- - estimated value for potential low bias

Mg/Kg: Milligrams per kilogram

TAL Metals Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag
START V Sample No.:	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-20
Mercury Sample weight (g)	0.54
Metals Sample weight (g)	2.33
Percent Solids	92.3
Dilution Factor	1
TAL METALS (Mg/Kg)	
Aluminum	**3760**
Antimony	0.421 UJ
Arsenic	**3.23**
Barium	**63.5**
Beryllium	**0.242 J**
Cadmium	**0.513**
Calcium	**11700**
Chromium	**10.84**
Cobalt	**4.8**
Copper	**32.5**
Iron	**7790**
Lead	**35**
Magnesium	**3250**
Manganese	**230**
Nickel	**11.4**
Potassium	**543**
Selenium	0.339 U
Silver	**0.646 J+**
Sodium	**53 J**
Thallium	0.452 U
Vanadium	**9.19**
Zinc	**62.3**
Mercury	**0.24**

U: Not Detected
J: Estimated Result

J+ - estimated value for potential high bias

J- - estimated value for potential low bias

Mg/Kg: Milligrams per kilogram

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: Metals ICP-TAL,Mercury

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for Metals ICP-TAL,Mercury.

C. Analytical Techniques:
The analysis of Metals ICP-TAL was based on method 6010D, digestion based on method 3050 (soils). The analysis and digestion of Mercury was based on method 7471B.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
Sample 789UMR-TP05-3036-01 was diluted due to high concentrations for Mercury.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike (789UMR-TP11-0006-01MS) analysis met criteria for all samples except for Antimony, Arsenic, Beryllium, Chromium, Copper, Selenium, Silver, Vanadium.
The Matrix Spike Duplicate (789UMR-TP11-0006-01MSD) analysis met criteria for all samples except for Antimony, Arsenic, Beryllium, Chromium, Copper, Selenium, Silver, Vanadium.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution (789UMR-TP11-0006-01L) analysis met criteria for all samples except for Aluminum, Copper, Iron, Manganese and Zinc.

E. Calculation:

1. Calculation for ICP-AES Soil Sample:

Conversion of Results from mg/L or ppm to mg/kg (Dry Weight Basis):

$$\text{Concentration (mg/kg)} = C \times \frac{V_f}{W \times S} \times DF$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)
V_f = Final digestion volume (mL)
W = Initial aliquot amount (g) (Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

2. Calculation for Hg Soil Sample:

Conversion of Results from µg /L or ppb to mg/kg :

$$\text{Concentration (mg/kg)} = C \times \frac{V_f}{W \times S} \times DF \times 0.1$$

Where,

C = Instrument response in µg/L from the calibration curve.
V_f = Final digestion volume (mL)
W = Initial aliquot amount (g) (Fraction of Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

F. Additional Comments:

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:54 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
Level (low/med):	low	% Solid:	94.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	2210		1	1.82	4.33	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-36-0	Antimony	0.98	JN	1	0.39	2.17	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-38-2	Arsenic	2.64	N	1	0.26	0.87	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-39-3	Barium	3160		1	1.03	4.33	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-41-7	Beryllium	0.14	JN+	1	0.063	0.26	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-43-9	Cadmium	0.56		1	0.064	0.26	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-70-2	Calcium	3110		1	21.0	86.6	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-47-3	Chromium	27.8	N	1	0.059	0.43	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-48-4	Cobalt	7.88		1	0.28	1.30	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-50-8	Copper	46.0	N	1	0.067	0.87	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7439-89-6	Iron	5780		1	0.71	4.33	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7439-92-1	Lead	30.6		1	0.16	0.52	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7439-95-4	Magnesium	1330		1	20.7	86.6	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7439-96-5	Manganese	501		1	0.13	0.87	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7439-97-6	Mercury	0.068		1	0.0020	0.013	mg/Kg	08/28/20 16:50	08/31/20 15:04	SW7471B
7440-02-0	Nickel	15.6		1	0.18	1.73	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-09-7	Potassium	228		1	18.1	86.6	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7782-49-2	Selenium	0.32	UN	1	0.32	0.87	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-22-4	Silver	3.92	N	1	0.14	0.43	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-23-5	Sodium	35.3	J	1	17.9	86.6	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-28-0	Thallium	0.42	U	1	0.42	1.73	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-62-2	Vanadium	11.9	N	1	0.42	1.73	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010
7440-66-6	Zinc	75.2		1	0.14	1.73	mg/Kg	08/31/20 09:43	08/31/20 14:47	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
Level (low/med):	low	% Solid:	93

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	3130		1	1.86	4.44	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-36-0	Antimony	0.74	JN	1	0.40	2.22	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-38-2	Arsenic	2.95	N	1	0.27	0.89	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-39-3	Barium	2380		1	1.06	4.44	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-41-7	Beryllium	0.21	JN	1	0.065	0.27	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-43-9	Cadmium	0.63		1	0.066	0.27	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-70-2	Calcium	4440		1	21.5	88.9	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-47-3	Chromium	17.9	N	1	0.060	0.44	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-48-4	Cobalt	7.65		1	0.28	1.33	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-50-8	Copper	78.0	N	1	0.069	0.89	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7439-89-6	Iron	7710		1	0.72	4.44	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7439-92-1	Lead	32.8		1	0.16	0.53	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7439-95-4	Magnesium	1650		1	21.2	88.9	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7439-96-5	Manganese	340		1	0.13	0.89	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7439-97-6	Mercury	0.17		1	0.0020	0.014	mg/Kg	08/28/20 16:50	08/31/20 15:06	SW7471B
7440-02-0	Nickel	15.0		1	0.18	1.78	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-09-7	Potassium	337		1	18.5	88.9	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7782-49-2	Selenium	0.32	UN	1	0.32	0.89	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-22-4	Silver	3.88	N	1	0.14	0.44	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-23-5	Sodium	37.6	J	1	18.3	88.9	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-28-0	Thallium	0.43	U	1	0.43	1.78	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-62-2	Vanadium	10.6	N	1	0.43	1.78	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010
7440-66-6	Zinc	117		1	0.14	1.78	mg/Kg	08/31/20 09:43	08/31/20 14:52	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
Level (low/med):	low	% Solid:	94

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	406		1	1.88	4.49	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-36-0	Antimony	0.41	UN	1	0.41	2.24	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-38-2	Arsenic	7.95	N	1	0.27	0.90	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-39-3	Barium	98.3		1	1.07	4.49	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-41-7	Beryllium	0.066	UN	1	0.066	0.27	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-43-9	Cadmium	0.18	J	1	0.067	0.27	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-70-2	Calcium	484		1	21.8	89.8	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-47-3	Chromium	2.79	N	1	0.061	0.45	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-48-4	Cobalt	0.78	J	1	0.29	1.35	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-50-8	Copper	4.49	N	1	0.070	0.90	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7439-89-6	Iron	795		1	0.73	4.49	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7439-92-1	Lead	16.4		1	0.17	0.54	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7439-95-4	Magnesium	196		1	21.5	89.8	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7439-96-5	Manganese	24.9		1	0.14	0.90	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7439-97-6	Mercury	0.060		1	0.0020	0.013	mg/Kg	08/28/20 16:50	08/31/20 15:08	SW7471B
7440-02-0	Nickel	2.23		1	0.18	1.80	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-09-7	Potassium	50.2	J	1	18.7	89.8	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7782-49-2	Selenium	0.33	UN	1	0.33	0.90	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-22-4	Silver	0.14	UN	1	0.14	0.45	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-23-5	Sodium	18.5	U	1	18.5	89.8	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-28-0	Thallium	0.44	U	1	0.44	1.80	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-62-2	Vanadium	1.66	JN	1	0.44	1.80	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010
7440-66-6	Zinc	12.8		1	0.15	1.80	mg/Kg	08/31/20 09:43	08/31/20 14:56	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
Level (low/med):	low	% Solid:	95.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	358		1	1.87	4.45	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-36-0	Antimony	0.40	UN	1	0.40	2.22	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-38-2	Arsenic	5.54	N	1	0.27	0.89	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-39-3	Barium	116		1	1.06	4.45	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-41-7	Beryllium	0.065	UN	1	0.065	0.27	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-43-9	Cadmium	0.15	J	1	0.066	0.27	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-70-2	Calcium	441		1	21.6	88.9	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-47-3	Chromium	3.33	N	1	0.061	0.45	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-48-4	Cobalt	0.85	J	1	0.28	1.33	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-50-8	Copper	3.85	N	1	0.069	0.89	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7439-89-6	Iron	847		1	0.73	4.45	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7439-92-1	Lead	13.0		1	0.16	0.53	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7439-95-4	Magnesium	154		1	21.3	88.9	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7439-96-5	Manganese	29.3		1	0.13	0.89	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7439-97-6	Mercury	0.78	D	2	0.0040	0.028	mg/Kg	08/28/20 16:50	08/31/20 15:52	SW7471B
7440-02-0	Nickel	1.82		1	0.18	1.78	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-09-7	Potassium	37.7	J	1	18.5	88.9	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7782-49-2	Selenium	0.32	UN	1	0.32	0.89	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-22-4	Silver	0.14	UN	1	0.14	0.45	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-23-5	Sodium	18.4	U	1	18.4	88.9	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-28-0	Thallium	0.43	U	1	0.43	1.78	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-62-2	Vanadium	1.82	N	1	0.43	1.78	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010
7440-66-6	Zinc	10.6		1	0.14	1.78	mg/Kg	08/31/20 09:43	08/31/20 15:00	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
Level (low/med):	low	% Solid:	86.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	9070		1	2.07	4.92	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-36-0	Antimony	0.45	UN	1	0.45	2.46	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-38-2	Arsenic	4.35	N	1	0.29	0.98	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-39-3	Barium	67.3		1	1.17	4.92	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-41-7	Beryllium	0.50	N	1	0.072	0.30	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-43-9	Cadmium	0.90		1	0.073	0.30	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-70-2	Calcium	3530		1	23.9	98.4	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-47-3	Chromium	14.2	N	1	0.067	0.49	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-48-4	Cobalt	11.0		1	0.32	1.48	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-50-8	Copper	23.9	N	1	0.077	0.98	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7439-89-6	Iron	14400		1	0.80	4.92	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7439-92-1	Lead	58.6		1	0.18	0.59	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7439-95-4	Magnesium	3290		1	23.5	98.4	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7439-96-5	Manganese	345		1	0.15	0.98	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7439-97-6	Mercury	0.32		1	0.0020	0.015	mg/Kg	08/28/20 16:50	08/31/20 15:13	SW7471B
7440-02-0	Nickel	18.9		1	0.20	1.97	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-09-7	Potassium	637		1	20.5	98.4	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7782-49-2	Selenium	0.36	UN	1	0.36	0.98	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-22-4	Silver	1.38	N	1	0.16	0.49	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-23-5	Sodium	45.0	J	1	20.3	98.4	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-28-0	Thallium	1.41	J	1	0.48	1.97	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-62-2	Vanadium	16.2	N	1	0.48	1.97	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010
7440-66-6	Zinc	98.2		1	0.16	1.97	mg/Kg	08/31/20 09:43	08/31/20 15:12	SW6010

09/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.6

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	10500		1	1.93	4.60	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-36-0	Antimony	0.42	UN	1	0.42	2.30	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-38-2	Arsenic	2.67	N	1	0.27	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-39-3	Barium	46.2		1	1.10	4.60	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-41-7	Beryllium	0.46	N	1	0.067	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-43-9	Cadmium	0.53		1	0.068	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-70-2	Calcium	3920		1	22.3	91.9	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-47-3	Chromium	11.6	N	1	0.063	0.46	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-48-4	Cobalt	7.78		1	0.29	1.38	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-50-8	Copper	8.87	N	1	0.072	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7439-89-6	Iron	13600		1	0.75	4.60	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7439-92-1	Lead	13.9		1	0.17	0.55	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7439-95-4	Magnesium	2870		1	22.0	91.9	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7439-96-5	Manganese	301		1	0.14	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7439-97-6	Mercury	0.048		1	0.0020	0.015	mg/Kg	08/28/20 16:50	08/31/20 15:15	SW7471B
7440-02-0	Nickel	12.8		1	0.19	1.84	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-09-7	Potassium	564		1	19.2	91.9	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7782-49-2	Selenium	0.34	UN	1	0.34	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-22-4	Silver	1.25	N	1	0.15	0.46	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-23-5	Sodium	80.6	J	1	19.0	91.9	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-28-0	Thallium	1.15	J	1	0.45	1.84	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-62-2	Vanadium	16.8	N	1	0.45	1.84	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010
7440-66-6	Zinc	40.8		1	0.15	1.84	mg/Kg	08/31/20 09:43	08/31/20 15:16	SW6010

1/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.9

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	7120		1	1.89	4.50	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-36-0	Antimony	0.41	UN	1	0.41	2.25	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-38-2	Arsenic	2.78	N	1	0.27	0.90	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-39-3	Barium	73.2		1	1.07	4.50	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-41-7	Beryllium	0.37	N	1	0.066	0.27	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-43-9	Cadmium	1.08		1	0.067	0.27	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-70-2	Calcium	36300		1	21.8	90.1	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-47-3	Chromium	10.1	N	1	0.061	0.45	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-48-4	Cobalt	8.56		1	0.29	1.35	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-50-8	Copper	13.5	N	1	0.070	0.90	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7439-89-6	Iron	12800		1	0.73	4.50	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7439-92-1	Lead	7.46		1	0.17	0.54	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7439-95-4	Magnesium	6030		1	21.5	90.1	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7439-96-5	Manganese	474		1	0.14	0.90	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7439-97-6	Mercury	0.027		1	0.0020	0.013	mg/Kg	08/28/20 16:50	08/31/20 15:22	SW7471B
7440-02-0	Nickel	16.6		1	0.18	1.80	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-09-7	Potassium	905		1	18.8	90.1	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7782-49-2	Selenium	0.33	UN	1	0.33	0.90	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-22-4	Silver	1.20	N	1	0.14	0.45	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-23-5	Sodium	86.6	J	1	18.6	90.1	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-28-0	Thallium	0.94	J+	1	0.44	1.80	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-62-2	Vanadium	12.9	N	1	0.44	1.80	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010
7440-66-6	Zinc	34.8		1	0.15	1.80	mg/Kg	08/31/20 09:43	08/31/20 15:20	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	4820		1	1.92	4.58	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-36-0	Antimony	0.41	UN	1	0.41	2.29	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-38-2	Arsenic	5.53	N	1	0.27	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-39-3	Barium	93.9		1	1.09	4.58	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-41-7	Beryllium	0.25	JN	1	0.067	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-43-9	Cadmium	0.69		1	0.068	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-70-2	Calcium	1800		1	22.2	91.5	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-47-3	Chromium	12.2	N	1	0.062	0.46	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-48-4	Cobalt	5.19		1	0.29	1.37	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-50-8	Copper	42.9	N	1	0.071	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7439-89-6	Iron	7470		1	0.75	4.58	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7439-92-1	Lead	34.0		1	0.17	0.55	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7439-95-4	Magnesium	1510		1	21.9	91.5	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7439-96-5	Manganese	329		1	0.14	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7439-97-6	Mercury	0.12		1	0.0020	0.014	mg/Kg	08/28/20 16:50	08/31/20 15:24	SW7471B
7440-02-0	Nickel	12.2		1	0.19	1.83	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-09-7	Potassium	558		1	19.1	91.5	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7782-49-2	Selenium	0.33	UN	1	0.33	0.92	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-22-4	Silver	0.36	JN	1	0.15	0.46	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-23-5	Sodium	26.7	J	1	18.9	91.5	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-28-0	Thallium	0.45	U	1	0.45	1.83	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-62-2	Vanadium	10.3	N	1	0.45	1.83	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010
7440-66-6	Zinc	64.4		1	0.15	1.83	mg/Kg	08/31/20 09:43	08/31/20 15:24	SW6010

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	3730	J	1	1.95	4.65	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-36-0	Antimony	0.42	UN	1	0.42	2.32	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-38-2	Arsenic	6.06	N	1	0.28	0.93	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-39-3	Barium	64.6		1	1.11	4.65	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-41-7	Beryllium	0.20	JN	1	0.068	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-43-9	Cadmium	0.67		1	0.069	0.28	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-70-2	Calcium	1500		1	22.5	93.0	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-47-3	Chromium	9.62	N	1	0.063	0.47	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-48-4	Cobalt	4.48		1	0.30	1.39	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-50-8	Copper	13.6	N	1	0.072	0.93	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7439-89-6	Iron	6000		1	0.76	4.65	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7439-92-1	Lead	32.4		1	0.17	0.56	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7439-95-4	Magnesium	1170		1	22.2	93.0	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7439-96-5	Manganese	273		1	0.14	0.93	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7439-97-6	Mercury	0.11		1	0.0020	0.014	mg/Kg	08/28/20 16:50	08/31/20 15:31	SW7471B
7440-02-0	Nickel	10.5		1	0.19	1.86	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-09-7	Potassium	451		1	19.4	93.0	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7782-49-2	Selenium	0.34	UN	1	0.34	0.93	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-22-4	Silver	0.15	UN	1	0.15	0.47	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-23-5	Sodium	23.7	J	1	19.2	93.0	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-28-0	Thallium	0.45	U	1	0.45	1.86	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-62-2	Vanadium	8.59	N	1	0.45	1.86	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010
7440-66-6	Zinc	52.9		1	0.15	1.86	mg/Kg	08/31/20 09:43	08/31/20 15:47	SW6010

9/30/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
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OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
Level (low/med):	low	% Solid:	95.1

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	2140		1	1.82	4.33	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-36-0	Antimony	0.39	UN	1	0.39	2.16	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-38-2	Arsenic	6.67	N	1	0.26	0.87	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-39-3	Barium	43.2		1	1.03	4.33	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-41-7	Beryllium	0.11	JN	1	0.063	0.26	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-43-9	Cadmium	0.54		1	0.064	0.26	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-70-2	Calcium	908		1	21.0	86.5	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-47-3	Chromium	5.63	N	1	0.059	0.43	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-48-4	Cobalt	3.00		1	0.28	1.30	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-50-8	Copper	10.8	N	1	0.067	0.87	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7439-89-6	Iron	3250		1	0.71	4.33	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7439-92-1	Lead	24.6		1	0.16	0.52	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7439-95-4	Magnesium	667		1	20.7	86.5	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7439-96-5	Manganese	152		1	0.13	0.87	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7439-97-6	Mercury	0.076		1	0.0020	0.014	mg/Kg	08/28/20 16:50	08/31/20 15:33	SW7471B
7440-02-0	Nickel	6.92		1	0.18	1.73	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-09-7	Potassium	257		1	18.0	86.5	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7782-49-2	Selenium	0.32	UN	1	0.32	0.87	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-22-4	Silver	0.14	UN	1	0.14	0.43	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-23-5	Sodium	17.9	U	1	17.9	86.5	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-28-0	Thallium	0.42	U	1	0.42	1.73	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-62-2	Vanadium	4.93	N	1	0.42	1.73	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010
7440-66-6	Zinc	31.6		1	0.14	1.73	mg/Kg	08/31/20 09:43	08/31/20 15:59	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
Level (low/med):	low	% Solid:	96.7

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	1640		1	1.80	4.29	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-36-0	Antimony	0.39	UN	1	0.39	2.15	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-38-2	Arsenic	5.07	N	1	0.26	0.86	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-39-3	Barium	63.8		1	1.02	4.29	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-41-7	Beryllium	0.089	JN	1	0.063	0.26	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-43-9	Cadmium	0.33		1	0.064	0.26	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-70-2	Calcium	869		1	20.8	85.8	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-47-3	Chromium	6.26	N	1	0.058	0.43	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-48-4	Cobalt	2.31		1	0.27	1.29	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-50-8	Copper	13.8	N	1	0.067	0.86	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7439-89-6	Iron	2910		1	0.70	4.29	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7439-92-1	Lead	20.7		1	0.16	0.52	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7439-95-4	Magnesium	560		1	20.5	85.8	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7439-96-5	Manganese	128		1	0.13	0.86	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7439-97-6	Mercury	0.078		1	0.0020	0.013	mg/Kg	08/28/20 16:50	08/31/20 15:36	SW7471B
7440-02-0	Nickel	5.87		1	0.17	1.72	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-09-7	Potassium	178		1	17.9	85.8	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7782-49-2	Selenium	0.31	UN	1	0.31	0.86	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-22-4	Silver	0.14	UN	1	0.14	0.43	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-23-5	Sodium	29.1	J	1	17.7	85.8	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-28-0	Thallium	0.42	U	1	0.42	1.72	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-62-2	Vanadium	4.49	N	1	0.42	1.72	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010
7440-66-6	Zinc	31.6		1	0.14	1.72	mg/Kg	08/31/20 09:43	08/31/20 16:03	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
Level (low/med):	low	% Solid:	96.2

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	1300		1	1.86	4.42	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-36-0	Antimony	0.40	UN	1	0.40	2.21	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-38-2	Arsenic	6.83	N	1	0.26	0.89	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-39-3	Barium	19.6		1	1.06	4.42	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-41-7	Beryllium	0.070	JN	1	0.065	0.27	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-43-9	Cadmium	0.81		1	0.066	0.27	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-70-2	Calcium	714		1	21.5	88.5	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-47-3	Chromium	2.73	N	1	0.060	0.44	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-48-4	Cobalt	2.02		1	0.28	1.33	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-50-8	Copper	4.43	N	1	0.069	0.89	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7439-89-6	Iron	2260		1	0.72	4.42	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7439-92-1	Lead	15.5		1	0.16	0.53	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7439-95-4	Magnesium	439		1	21.2	88.5	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7439-96-5	Manganese	114		1	0.13	0.89	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7439-97-6	Mercury	0.040		1	0.0020	0.015	mg/Kg	08/28/20 16:50	08/31/20 15:38	SW7471B
7440-02-0	Nickel	3.37		1	0.18	1.77	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-09-7	Potassium	134		1	18.4	88.5	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7782-49-2	Selenium	0.32	UN	1	0.32	0.89	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-22-4	Silver	0.14	UN	1	0.14	0.44	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-23-5	Sodium	18.3	U	1	18.3	88.5	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-28-0	Thallium	0.43	U	1	0.43	1.77	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-62-2	Vanadium	3.08	N	1	0.43	1.77	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010
7440-66-6	Zinc	16.8		1	0.14	1.77	mg/Kg	08/31/20 09:43	08/31/20 16:07	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
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Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
Level (low/med):	low	% Solid:	92.3

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
7429-90-5	Aluminum	3760		1	1.95	4.65	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-36-0	Antimony	0.42	UN	1	0.42	2.32	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-38-2	Arsenic	3.23	N	1	0.28	0.93	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-39-3	Barium	63.5		1	1.11	4.65	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-41-7	Beryllium	0.24	JN	1	0.068	0.28	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-43-9	Cadmium	0.51		1	0.069	0.28	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-70-2	Calcium	11700		1	22.5	93.0	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-47-3	Chromium	10.8	N	1	0.063	0.47	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-48-4	Cobalt	4.80		1	0.30	1.39	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-50-8	Copper	32.5	N	1	0.072	0.93	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7439-89-6	Iron	7790		1	0.76	4.65	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7439-92-1	Lead	35.0		1	0.17	0.56	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7439-95-4	Magnesium	3250		1	22.2	93.0	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7439-96-5	Manganese	230		1	0.14	0.93	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7439-97-6	Mercury	0.24		1	0.0020	0.014	mg/Kg	08/28/20 16:50	08/31/20 15:40	SW7471B
7440-02-0	Nickel	11.4		1	0.19	1.86	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-09-7	Potassium	543		1	19.4	93.0	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7782-49-2	Selenium	0.34	UN	1	0.34	0.93	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-22-4	Silver	0.65	N	1	0.15	0.47	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-23-5	Sodium	53.0	J	1	19.2	93.0	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-28-0	Thallium	0.45	U	1	0.45	1.86	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-62-2	Vanadium	9.19	N	1	0.45	1.86	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010
7440-66-6	Zinc	62.3		1	0.15	1.86	mg/Kg	08/31/20 09:43	08/31/20 16:11	SW6010

9/24/2020

Color Before:	Brown	Clarity Before:		Texture:	Medium
Color After:	Yellow	Clarity After:		Artifacts:	No
Comments:	METALS TAL+CN				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
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Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	

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LAB CHRONICLE

L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	

RCRA Characteristics Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-DSP01-01	789UMR-DSP01-02[1]	789UMR-DSP02-01
Lab sample ID No.:	L3837-01	L3837-04	L3837-05
Percent (%) Solid	100	100	100
Dilution Factor	1	1	1
RCRA Characteristics			
Corrosivity -pH	8.4 J	8.61 J	8.58 J
Ignitability - ^{0}C	No	No	No
Reactive Cyanide - mg/Kg	0.049 U	0.50 U	0.05 U
Reactive Sulfide - mg/Kg	10 U	10 U	10 U

[1] A field duplicate of sample 789UMR-DSP01-01

U: Not Detected

J: Estimated Result

No: Sample was not ignited

Mg/Kg: Milligrams per kilograms (mg/Kg)

^{0}C: degree centigrade

Cyanide Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP05-0612-01	789UMR-TP05-1218-01	789UMR-TP05-1824-01	789UMR-TP05-3036-01	789UMR-TP06-0006-01
Lab sample ID No.:	L3837-06	L3837-07	L3837-08	L3837-09	L3837-10
Sample weight (g)	1.02	1.04	1.03	1.02	1.05
Percent Solids	94.6	93	94	95.7	86.1
Dilution Factor	1	1	1	1, *2	1
Cyanide (Mg/Kg)					
Cyanide	**0.18 J**	**0.16 J**	0.089 U	**0.11 J**	**0.13 J**

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP07-1218-01	789UMR-TP08-1824-01	789UMR-TP11-0006-01	789UMR-TP11-0006-02[1]	789UMR-TP11-0612-01
Lab sample ID No.:	L3837-11	L3837-12	L3837-13	L3837-16	L3837-17
Sample weight (g)	1.03	1.02	1.03	1.05	1.06
Percent Solids	92.6	92.9	92.2	92.3	95.1
Dilution Factor	1	1	1	1	1
Cyanide (Mg/Kg)					
Cyanide	**0.16 J**	0.091 U	**0.15 J**	**0.12 J**	**0.097 J**

Matrix:	Soil/Rock/Slag	Soil/Rock/Slag	Soil/Rock/Slag
START V Sample No.:	789UMR-TP11-2430-01	789UMR-TP12-0002-01	789UMR-TP13-0612-01
Lab sample ID No.:	L3837-18	L3837-19	L3837-20
Sample weight (g)	1.03	1.05	1.04
Percent Solids	96.7	96.2	92.3
Dilution Factor	1	1	1
Cyanide (Mg/Kg)			
Cyanide	**0.12 J**	**0.099 J**	**0.15 J**

[1] A field duplicate of sample 789UMR-TP11-0006-01

U: Not Detected

J: Estimated Result

Mg/Kg: Milligrams per kilograms (mg/Kg)

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: Corrosivity,Cyanide,Ignitability,Reactive Cyanide,Reactive Sulfide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for Corrosivity,Cyanide,Ignitability,Reactive Cyanide,Reactive Sulfide.

C. Analytical Techniques:
The analysis of Ignitability was based on method 1030, The analysis of Cyanide,Reactive Cyanide was based on method 9012B, The analysis of Reactive Sulfide was based on method 9034 and The analysis of Corrosivity was based on method 9045D.

D. QA/ QC Samples:
The Holding Times were met for all samples except for 789UMR-DSP01-01 of Corrosivity, for 789UMR-DSP01-02 of Corrosivity, for 789UMR-DSP02-01 of Corrosivity.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.

E.Calculation :

Calculation for CN Soil Sample:

$$\text{Concentration (mg/kg)} = C \times \frac{Vf}{W \times S} \times DF / 1000$$

Where,

C = Instrument response in µg/L CN from the calibration curve.
Vf = Final prepared (absorbing solution) volume (mL)
W = Initial aliquot amount (g) (Fraction of Sample amount taken in prep)
S = % Solids / 100 (Fraction of Percent Solids)
DF = Dilution Factor

F. Additional Comments:

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature__ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:55 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 17:05
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.40	H J	1	0	0	pH		08/28/20 17:10	9045D
Ignitability	NO		1	0	0	oC		08/31/20 10:05	1030
Reactive Cyanide	0.049	U	1	0.049	0.049	mg/Kg	08/31/20 09:30	09/01/20 13:08	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/31/20 09:30	08/31/20 11:48	9034

9/26/2020

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 17:05
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.61	H J	1	0	0	pH		08/28/20 17:11	9045D
Ignitability	NO		1	0	0	oC		08/31/20 10:12	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/31/20 09:30	09/01/20 13:08	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/31/20 09:30	08/31/20 11:50	9034

9/28/2020

Comments:

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N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 15:25
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	SOIL
		% Solid:	100

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
Corrosivity	8.58	H J	1	0	0	pH		08/28/20 17:12	9045D
Ignitability	NO		1	0	0	oC		08/31/20 10:20	1030
Reactive Cyanide	0.050	U	1	0.050	0.050	mg/Kg	08/31/20 09:30	09/01/20 13:15	9012B
Reactive Sulfide	10.0	U	1	10.0	10.0	mg/Kg	08/31/20 09:30	08/31/20 11:52	9034

Comments:

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LOD = Limit of Detection
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Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 12:36
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-06	Matrix:	SOIL
		% Solid:	94.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.18	J	1	0.089	0.26	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 12:45
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-07	Matrix:	SOIL
		% Solid:	93

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.16	J	1	0.089	0.26	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
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H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 13:05
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-08	Matrix:	SOIL
		% Solid:	94

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.089	U	1	0.089	0.26	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
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H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 13:18
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP05-3036-01	SDG No.:	L3837
Lab Sample ID:	L3837-09	Matrix:	SOIL
		% Solid:	95.7

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.11	J	1	0.088	0.26	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 09:30
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP06-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-10	Matrix:	SOIL
		% Solid:	86.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.13	J	1	0.095	0.28	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 14:40
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP07-1218-01	SDG No.:	L3837
Lab Sample ID:	L3837-11	Matrix:	SOIL
		% Solid:	92.6

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.16	J	1	0.090	0.26	mg/Kg	08/28/20 14:00	09/01/20 10:57	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 12:15
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP08-1824-01	SDG No.:	L3837
Lab Sample ID:	L3837-12	Matrix:	SOIL
		% Solid:	92.9

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.091	U	1	0.091	0.26	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
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H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 16:05
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-01	SDG No.:	L3837
Lab Sample ID:	L3837-13	Matrix:	SOIL
		% Solid:	92.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.15	J	1	0.090	0.26	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements
H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 16:07
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0006-02	SDG No.:	L3837
Lab Sample ID:	L3837-16	Matrix:	SOIL
		% Solid:	92.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.12	J	1	0.088	0.26	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

U = Not Detected
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MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
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H = Sample Analysis Out Of Hold Time

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OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 16:07
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-17	Matrix:	SOIL
		% Solid:	95.1

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.097	J	1	0.085	0.25	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
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H = Sample Analysis Out Of Hold Time

J = Estimated Value
B = Analyte Found in Associated Method Blank
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OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20 16:25
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP11-2430-01	SDG No.:	L3837
Lab Sample ID:	L3837-18	Matrix:	SOIL
		% Solid:	96.7

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.12	J	1	0.086	0.25	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

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MDL = Method Detection Limit
LOD = Limit of Detection
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 08:45
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP12-0002-01	SDG No.:	L3837
Lab Sample ID:	L3837-19	Matrix:	SOIL
		% Solid:	96.2

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.099	J	1	0.085	0.25	mg/Kg	08/28/20 14:00	09/01/20 11:04	9012B

Comments:

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LOD = Limit of Detection
D = Dilution
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H = Sample Analysis Out Of Hold Time

J = Estimated Value
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E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20 14:55
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-TP13-0612-01	SDG No.:	L3837
Lab Sample ID:	L3837-20	Matrix:	SOIL
		% Solid:	92.3

Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units(Dry Weight)	Prep Date	Date Ana.	Ana Met.
Cyanide	0.15	J	1	0.089	0.26	mg/Kg	08/28/20 14:00	09/01/20 11:12	9012B

Comments:

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LOD = Limit of Detection
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OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**SOIL**			**08/25/20 17:05**			**08/28/20**
			Corrosivity	9045D			08/28/20 17:10	
			Ignitability	1030			08/31/20 10:05	
			Reactive Cyanide	9012B		08/31/20	09/01/20 13:08	
			Reactive Sulfide	9034		08/31/20	08/31/20 11:48	
L3837-04	**789UMR-DSP01-02**	**SOIL**			**08/25/20 17:05**			**08/28/20**
			Corrosivity	9045D			08/28/20 17:11	
			Ignitability	1030			08/31/20 10:12	
			Reactive Cyanide	9012B		08/31/20	09/01/20 13:08	
			Reactive Sulfide	9034		08/31/20	08/31/20 11:50	
L3837-05	**789UMR-DSP02-01**	**SOIL**			**08/26/20 15:25**			**08/28/20**
			Corrosivity	9045D			08/28/20 17:12	
			Reactive Sulfide	9034		08/31/20	08/31/20 11:52	
			Reactive Cyanide	9012B		08/31/20	09/01/20 13:15	
			Ignitability	1030			08/31/20 10:20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20 12:36**			**08/28/20**

LAB CHRONICLE

			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20 12:45**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20 13:05**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20 13:18**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20 09:30**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20 14:40**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 10:57	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20 12:15**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20 16:05**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20 16:07**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20 16:07**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	

CHEMTECH
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LAB CHRONICLE

L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20 16:25**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20 08:45**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:04	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20 14:55**			**08/28/20**
			Cyanide	9012B		08/28/20	09/01/20 11:12	

TCLP Analytes Summary Table
789 Upper Mountain Road Site
Lewiston, Niagara County, New York
August 25-26, 2020

Matrix:	**Soil/Rock/Slag**	**Soil/Rock/Slag**	**Soil/Rock/Slag**
START V Sample No.:	**789UMR-DSP01**	**789UMR-DSP01-02[1]**	**789UMR-DSP02-01**
Lab sample ID No.:	**L3827-01**	**L3827-04**	**L3827-05**
Dilution Factor	**1**	**1**	**1**
TCLP SemiVolatiles	ug/L		
Pyridine	34 UJ	34 UJ	34 U
1,4-Dichlorobenzene	16.8 U	16.8 U	16.8 U
2-Methylphenol	13.7 U	13.7 U	13.7 U
3+4-Methylphenols	60.1 U	60.1 U	60.1 U
Hexachloroethane	22.2 U	22.2 U	22.2 U
Nitrobenzene	14.2 U	14.2 U	14.2 U
Hexachlorobutadiene	21.4 U	21.4 U	21.4 U
2,4,6-Trichlorophenol	16.2 U	16.2 U	16.2 U
2,4,5-Trichlorophenol	10.7 U	10.7 U	10.7 U
2,4-Dinitrotoluene	28.1 U	28.1 U	28.1 U
Hexachlorobenzene	18.9 U	18.9 U	18.9 U
Pentachlorophenol	29.5 U	29.5 U	29.5 U
TCLP Pesticides			
gamma-BHC (Lindane)	0.078 U	0.078 U	0.078 U
Heptachlor	0.024 U	0.024 U	0.024 U
Heptachlor epoxide	0.059 U	0.059 UJ	0.059 UJ
Endrin	0.028 U	0.028 U	0.028 U
Methoxychlor	0.094 U	0.094 U	0.094 U
Toxaphene	1.1 U	1.1 U	1.1 U
Chlordane	0.781 U	0.781 U	0.781 U
TCLP Herbicides			
2,4-D	6 U	6 UJ	6 UJ
2,4,5-TP (Silvex)	2.6 U	2.6 UJ	2.6 UJ
TCLP Metals			
Arsenic	23.8 U	23.8 U	23.8 U
Barium	**1220**	**1220**	**1910**
Cadmium	7.11 U	7.11 U	7.11 U
Chromium	8.07 U	8.07 U	8.07 U
Lead	12.5 U	12.5 U	12.5 U
Selenium	25.5 UJ	100 U	100 U
Silver	12.1 U	12.1 U	12.1 U
Mercury	0.385 UJ	0.385 U	0.385 U

[1] A field duplicate of sample 789UMR-DSP01-01
TCLP: Toxicity Characteristic Leaching Procedure
U: Not Detected
J: Estimated Result
ug/L: Micrograms per liter

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: TCLP BNA

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for TCLP BNA.

C. Analytical Techniques:
The samples were analyzed on instrument BNA_F using GC Column DB-UI 8270D which is 20 meters, 0.18 mm ID, 0.36 um dfThe samples were analyzed on instrument BNA_G using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGAThe samples were analyzed on instrument BNA_P using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGAThe analysis of TCLP BNA was based on method 8270D and extraction was done based on method 3510 and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Internal Standards Areas met the acceptable requirements.
The Retention Times were acceptable for all samples.
The MS {L3837-02MS} with File ID: BG046508.D recoveries met the requirements for all compounds except for Pyridine[66%] .
The MSD {L3837-03MSD} with File ID: BG046509.D recoveries met the acceptable requirements except for Pyridine[68%] .
The RPD met criteria .
The Blank Spike met requirements for all samples .

The Blank analysis did not indicate the presence of lab contamination.
The %RSD is greater than 20% in the Initial Calibration (Method 8270-BF082720.M) for 2,4-Dinitrotoluene, this compound is passing on LR.

The Continuous Calibration met the requirements .

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The Tuning criteria met requirements.

E. Additional Comments:
The Form 6 is not included in the data package because the Initial Calibration was performed using 7 points.

Concentration of Water Sample

$$\text{(concentration in ug/L)} = \frac{(A\ x\ )(I\ s\ )\ )(Vt)\ (Df)}{(Ais)\ (RRF)(V0)\ (Vi)}$$

Where, Ax = Area for the compound to be measured
Ais = Area for the specific internal standard
Is = Amount of internal standard added in nanograms (ng)
RRF = Relative response factor of initial calibration standard average.
Vo = Volume of water extracted in milliliters (mL)
Vi = Volume of extract injected in microliters (uL)
Vt = Volume of concentrated extract in microliters (uL)
Df = Dilution facto

Please use %D calculated based on Avg RF and CCRF for all compounds using Average Response Factor when the %RSD value for a compound is <15% for the Initial Calibration curve and use %D calculated based on Amount added and Calculated amount for all compounds using Linear Regression when the %RSD value for a compound is > 15% for the Initial Calibration curve for SW-846 analysis.

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:52 am, Sep 15, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046507.D	1	09/02/20 11:00	09/02/20 17:30	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
110-86-1	Pyridine	34.0	U J	34.0	50.0	ug/L
106-46-7	1,4-Dichlorobenzene	16.8	U	16.8	50.0	ug/L
95-48-7	2-Methylphenol	13.7	U	13.7	50.0	ug/L
65794-96-9	3+4-Methylphenols	60.1	U	60.1	100	ug/L
67-72-1	Hexachloroethane	22.2	U	22.2	50.0	ug/L
98-95-3	Nitrobenzene	14.2	U	14.2	50.0	ug/L
87-68-3	Hexachlorobutadiene	21.4	U	21.4	50.0	ug/L
88-06-2	2,4,6-Trichlorophenol	16.2	U	16.2	50.0	ug/L
95-95-4	2,4,5-Trichlorophenol	10.7	U	10.7	50.0	ug/L
121-14-2	2,4-Dinitrotoluene	28.1	U	28.1	50.0	ug/L
118-74-1	Hexachlorobenzene	18.9	U	18.9	50.0	ug/L
87-86-5	Pentachlorophenol	29.5	U	29.5	100	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	123		10 - 130	82%	SPK: 150
13127-88-3	Phenol-d6	103		10 - 130	69%	SPK: 150
4165-60-0	Nitrobenzene-d5	95.3		36 - 131	95%	SPK: 100
321-60-8	2-Fluorobiphenyl	89.7		39 - 131	90%	SPK: 100
118-79-6	2,4,6-Tribromophenol	146		25 - 155	97%	SPK: 150
1718-51-0	Terphenyl-d14	82.4		23 - 130	82%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	58400	7.93			
1146-65-2	Naphthalene-d8	240000	10.73			
15067-26-2	Acenaphthene-d10	172000	14.56			
1517-22-2	Phenanthrene-d10	486000	17.3			
1719-03-5	Chrysene-d12	512000	21.55			
1520-96-3	Perylene-d12	519000	24.65			

9/18/2020.

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046507.D	1	09/02/20 11:00	09/02/20 17:30	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046510.D	1	09/02/20 11:00	09/02/20 19:33	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
110-86-1	Pyridine	34.0	U J	34.0	50.0	ug/L
106-46-7	1,4-Dichlorobenzene	16.8	U	16.8	50.0	ug/L
95-48-7	2-Methylphenol	13.7	U	13.7	50.0	ug/L
65794-96-9	3+4-Methylphenols	60.1	U	60.1	100	ug/L
67-72-1	Hexachloroethane	22.2	U	22.2	50.0	ug/L
98-95-3	Nitrobenzene	14.2	U	14.2	50.0	ug/L
87-68-3	Hexachlorobutadiene	21.4	U	21.4	50.0	ug/L
88-06-2	2,4,6-Trichlorophenol	16.2	U	16.2	50.0	ug/L
95-95-4	2,4,5-Trichlorophenol	10.7	U	10.7	50.0	ug/L
121-14-2	2,4-Dinitrotoluene	28.1	U	28.1	50.0	ug/L
118-74-1	Hexachlorobenzene	18.9	U	18.9	50.0	ug/L
87-86-5	Pentachlorophenol	29.5	U	29.5	100	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	122		10 - 130	81%	SPK: 150
13127-88-3	Phenol-d6	104		10 - 130	69%	SPK: 150
4165-60-0	Nitrobenzene-d5	90.8		36 - 131	91%	SPK: 100
321-60-8	2-Fluorobiphenyl	85.2		39 - 131	85%	SPK: 100
118-79-6	2,4,6-Tribromophenol	137		25 - 155	91%	SPK: 150
1718-51-0	Terphenyl-d14	77.4		23 - 130	77%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	58100	7.93			
1146-65-2	Naphthalene-d8	242000	10.73			
15067-26-2	Acenaphthene-d10	176000	14.56			
1517-22-2	Phenanthrene-d10	511000	17.3			
1719-03-5	Chrysene-d12	535000	21.55			
1520-96-3	Perylene-d12	540000	24.65			

9/18/2020

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046510.D	1	09/02/20 11:00	09/02/20 19:33	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003190.D	1	09/02/20 11:00	09/02/20 17:03	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
110-86-1	Pyridine	34.0	U	34.0	50.0	ug/L
106-46-7	1,4-Dichlorobenzene	16.8	U	16.8	50.0	ug/L
95-48-7	2-Methylphenol	13.7	U	13.7	50.0	ug/L
65794-96-9	3+4-Methylphenols	60.1	U	60.1	100	ug/L
67-72-1	Hexachloroethane	22.2	U	22.2	50.0	ug/L
98-95-3	Nitrobenzene	14.2	U	14.2	50.0	ug/L
87-68-3	Hexachlorobutadiene	21.4	U	21.4	50.0	ug/L
88-06-2	2,4,6-Trichlorophenol	16.2	U	16.2	50.0	ug/L
95-95-4	2,4,5-Trichlorophenol	10.7	U	10.7	50.0	ug/L
121-14-2	2,4-Dinitrotoluene	28.1	U	28.1	50.0	ug/L
118-74-1	Hexachlorobenzene	18.9	U	18.9	50.0	ug/L
87-86-5	Pentachlorophenol	29.5	U	29.5	100	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	111		10 - 130	74%	SPK: 150
13127-88-3	Phenol-d6	96.8		10 - 130	65%	SPK: 150
4165-60-0	Nitrobenzene-d5	88.4		36 - 131	88%	SPK: 100
321-60-8	2-Fluorobiphenyl	80.3		39 - 131	80%	SPK: 100
118-79-6	2,4,6-Tribromophenol	135		25 - 155	90%	SPK: 150
1718-51-0	Terphenyl-d14	80.8		23 - 130	81%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	161000	7.65			
1146-65-2	Naphthalene-d8	695000	10.43			
15067-26-2	Acenaphthene-d10	450000	14.3			
1517-22-2	Phenanthrene-d10	1040000	17.05			
1719-03-5	Chrysene-d12	1190000	21.15			
1520-96-3	Perylene-d12	1190000	23.37			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BP003190.D	1	09/02/20 11:00	09/02/20 17:03	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	09/02/20
Project:	RFP 631	Date Received:	09/02/20
Client Sample ID:	PB131374TB	SDG No.:	L3837
Lab Sample ID:	PB131374TB	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046513.D	1	09/02/20 11:00	09/03/20 11:37	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
110-86-1	Pyridine	34.0	U	34.0	50.0	ug/L
106-46-7	1,4-Dichlorobenzene	16.8	U	16.8	50.0	ug/L
95-48-7	2-Methylphenol	13.7	U	13.7	50.0	ug/L
65794-96-9	3+4-Methylphenols	60.1	U	60.1	100	ug/L
67-72-1	Hexachloroethane	22.2	U	22.2	50.0	ug/L
98-95-3	Nitrobenzene	14.2	U	14.2	50.0	ug/L
87-68-3	Hexachlorobutadiene	21.4	U	21.4	50.0	ug/L
88-06-2	2,4,6-Trichlorophenol	16.2	U	16.2	50.0	ug/L
95-95-4	2,4,5-Trichlorophenol	10.7	U	10.7	50.0	ug/L
121-14-2	2,4-Dinitrotoluene	28.1	U	28.1	50.0	ug/L
118-74-1	Hexachlorobenzene	18.9	U	18.9	50.0	ug/L
87-86-5	Pentachlorophenol	29.5	U	29.5	100	ug/L
SURROGATES						
367-12-4	2-Fluorophenol	116		10 - 130	77%	SPK: 150
13127-88-3	Phenol-d6	104		10 - 130	69%	SPK: 150
4165-60-0	Nitrobenzene-d5	75.3		36 - 131	75%	SPK: 100
321-60-8	2-Fluorobiphenyl	77.1		39 - 131	77%	SPK: 100
118-79-6	2,4,6-Tribromophenol	95.6		25 - 155	64%	SPK: 150
1718-51-0	Terphenyl-d14	67.6		23 - 130	68%	SPK: 100
INTERNAL STANDARDS						
3855-82-1	1,4-Dichlorobenzene-d4	70700	7.93			
1146-65-2	Naphthalene-d8	291000	10.73			
15067-26-2	Acenaphthene-d10	193000	14.56			
1517-22-2	Phenanthrene-d10	464000	17.3			
1719-03-5	Chrysene-d12	528000	21.55			
1520-96-3	Perylene-d12	518000	24.65			

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	09/02/20
Project:	RFP 631	Date Received:	09/02/20
Client Sample ID:	PB131374TB	SDG No.:	L3837
Lab Sample ID:	PB131374TB	Matrix:	TCLP
Analytical Method:	SW8270	% Moisture:	100
Sample Wt/Vol:	100 Units: mL	Final Vol:	1000 uL
Soil Aliquot Vol:	uL	Test:	TCLP BNA
Extraction Type :	Decanted : N	Level :	LOW
Injection Volume :	GPC Factor : 1.0	GPC Cleanup :	N PH :

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
BG046513.D	1	09/02/20 11:00	09/03/20 11:37	PB131374

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
() = Laboratory InHouse Limit
A = Aldol-Condensation Reaction Products

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP BNA	8270D		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP BNA	8270D		09/02/20	09/02/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP BNA	8270D		09/02/20	09/02/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	

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LAB CHRONICLE

L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			SVOC-TCL BNA -20	8270D		08/28/20	08/28/20	

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: TCLP Pesticide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for TCLP Pesticide.

C. Analytical Techniques:
The analysis was performed on instrument ECD_L. The front column is ZB-MR2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 7HMG017- 11 The rear column is ZB-MR1 which is 30 meters, 0.32 mm ID, 0. 5 um df,: Catalog # 7HM-G016-17. .The analysis of TCLP Pesticides was based on method 8081B and extraction was done based on method 3510 and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Surrogate recoveries met the acceptable criteria.
The Retention Times were acceptable for all samples.
The MS recoveries met the requirements for all compounds.
The MSD recoveries met the acceptable requirements.
The RPD met criteria.
The Blank Spike met requirements for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements.
The Continuous Calibration File ID PL061209.D met the requirements except for Heptachlor epoxide is failing in 2nd column and associated samples having no hit for this compound.

E. Additional Comments:
F. Calculation for Concentration in Water samples:

$$\text{Concentration ug/L} = \frac{(Ax)\ (Vt)\ (DF)\ (GPC)}{(CF)\ (Vi)\ (Vo)}$$

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Where,
Ax = Response (peak area or height) of the compound to be measured.
CF = Mean Calibration Factor from the initial calibration (area/ng).
Vt = Volume of the concentrated extract in uL
Vo = Volume of water extracted in mL.
Vi = Volume of extract injected (uL). (If a single injection is made onto two columns, use ½ the volume in the syringe as the volume injected onto each column).

$$GPC = \frac{Vin}{Vout} = \text{GPC factor (If no GPC is performed, GPC=1)}$$

DF = Dilution Factor

F. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature___ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:53 am, Sep 15, 2020

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SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	TCLP
Analytical Method:	SW8081	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Pesticide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061202.D	1	09/02/20 10:40	09/02/20 17:05	PB131373

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
58-89-9	gamma-BHC (Lindane)	0.078	U	0.078	0.50	ug/L
76-44-8	Heptachlor	0.024	U	0.024	0.50	ug/L
1024-57-3	Heptachlor epoxide	0.059	U	0.059	0.50	ug/L
72-20-8	Endrin	0.028	U	0.028	0.50	ug/L
72-43-5	Methoxychlor	0.094	U	0.094	0.50	ug/L
8001-35-2	Toxaphene	1.10	U	1.10	10.0	ug/L
57-74-9	Chlordane	0.78	U	0.78	5.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	21.8		10 - 192	109%	SPK: 20
877-09-8	Tetrachloro-m-xylene	17.3		10 - 172	86%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	TCLP
Analytical Method:	SW8081	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Pesticide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061205.D	1	09/02/20 10:40	09/02/20 17:48	PB131373

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
58-89-9	gamma-BHC (Lindane)	0.078	U	0.078	0.50	ug/L
76-44-8	Heptachlor	0.024	U	0.024	0.50	ug/L
1024-57-3	Heptachlor epoxide	0.059	U J	0.059	0.50	ug/L
72-20-8	Endrin	0.028	U	0.028	0.50	ug/L
72-43-5	Methoxychlor	0.094	U	0.094	0.50	ug/L
8001-35-2	Toxaphene	1.10	U	1.10	10.0	ug/L
57-74-9	Chlordane	0.78	U	0.78	5.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	21.4		10 - 192	107%	SPK: 20
877-09-8	Tetrachloro-m-xylene	16.6		10 - 172	83%	SPK: 20

9/18/2020

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	TCLP
Analytical Method:	SW8081	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Pesticide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061206.D	1	09/02/20 10:40	09/02/20 18:02	PB131373

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
58-89-9	gamma-BHC (Lindane)	0.078	U	0.078	0.50	ug/L
76-44-8	Heptachlor	0.024	U	0.024	0.50	ug/L
1024-57-3	Heptachlor epoxide	0.059	U J	0.059	0.50	ug/L
72-20-8	Endrin	0.028	U	0.028	0.50	ug/L
72-43-5	Methoxychlor	0.094	U	0.094	0.50	ug/L
8001-35-2	Toxaphene	1.10	U	1.10	10.0	ug/L
57-74-9	Chlordane	0.78	U	0.78	5.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	21.4		10 - 192	107%	SPK: 20
877-09-8	Tetrachloro-m-xylene	16.0		10 - 172	80%	SPK: 20

9/18/2020

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	
Project:	RFP 631	Date Received:	09/02/20
Client Sample ID:	PB131373TB	SDG No.:	L3837
Lab Sample ID:	PB131373TB	Matrix:	TCLP
Analytical Method:	SW8081	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Pesticide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PL061201.D	1	09/02/20 10:40	09/02/20 16:51	PB131373

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
58-89-9	gamma-BHC (Lindane)	0.078	U	0.078	0.50	ug/L
76-44-8	Heptachlor	0.024	U	0.024	0.50	ug/L
1024-57-3	Heptachlor epoxide	0.059	U	0.059	0.50	ug/L
72-20-8	Endrin	0.028	U	0.028	0.50	ug/L
72-43-5	Methoxychlor	0.094	U	0.094	0.50	ug/L
8001-35-2	Toxaphene	1.10	U	1.10	10.0	ug/L
57-74-9	Chlordane	0.78	U	0.78	5.00	ug/L
SURROGATES						
2051-24-3	Decachlorobiphenyl	20.8		10 - 192	104%	SPK: 20
877-09-8	Tetrachloro-m-xylene	18.9		10 - 172	94%	SPK: 20

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**

LAB CHRONICLE

			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	09/01/20	

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: TCLP Herbicide

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for TCLP Herbicide.

C. Analytical Techniques:
The analysis was performed on instrument ECD_S. The front column is RTX-CLPesticides which is 30 meters, 0.32 mm ID, 0. 5 um df,: Catalog # 11139. The rear column is RTX-CLPesticides2 which is 30 meters, 0.32 mm ID, 0.25 um df, Catalog #: 11324The analysis of TCLP Herbicides was based on method 8151A and extraction was done based on method 3510 and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria except for 789UMR-DSP01-02 [2,4-DCAA(1) - 39%], 789UMR-DSP01-02RE [2,4-DCAA(1) - 35%], 789UMR-DSP02-01 [2,4-DCAA(1) - 41%], 789UMR-DSP02-01RE [2 and4-DCAA(1) - 41%].

The Retention Times were acceptable for all samples.

The MS {L3837-02MS} with File ID: PS012081.D recoveries met the requirements for all compounds except for 2,4,5-TP(Silvex)[174%] due to sample matrix interference.

The MSD {L3837-03MSD} with File ID: PS012082.D recoveries met the acceptable requirements except for 2,4,5-TP(Silvex)[182%] due to sample matrix interference.

The RPD met criteria .
The Blank Spike met requirements for all samples .

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The Blank analysis did not indicate the presence of lab contamination.
The Initial Calibration met the requirements .
The Continuous Calibration met the requirements .

E. Additional Comments:

F. Calculation for Concentration in Water samples:

$$Ug/L = \frac{(Ax)\ (Vt)\ (MW)}{(ICF)\ (Vi)\ (Vs)} \quad X\ DF$$

Where:

Ax = Area for the parameter to be measured.
ICF = average calibration factor for the calibration standards.
Vt = Volume of total extract in uL (Take into account dilutions)
Is = Amount of standard injected in nanograms (ng)
Vi = Volume of extract injected.
Vs = Volume of Aqueous extracted (mL).

$$D = \frac{100 - \%\ Moisture}{100}$$

MW = molecular weight of the compound

G. Manual Integration Comments:
Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:54 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012080.D	1	09/02/20 10:55	09/03/20 12:33	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	357		43 - 172	71%	SPK: 500

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012061.D	1	09/02/20 10:55	09/02/20 22:43	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U J	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U J	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	247		43 - 172	49%	SPK: 500

9/21/2020

Comments:

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M = MS/MSD acceptance criteria did not meet requirements

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B = Analyte Found in Associated Method Blank
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S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02RE	SDG No.:	L3837
Lab Sample ID:	L3837-04RE	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012083.D	1	09/02/20 10:55	09/03/20 13:42	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U J	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U J	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	239		43 - 172	48%	SPK: 500

Do not use this Form II

9/21/2020

Comments:

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LOD = Limit of Detection
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P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012062.D	1	09/02/20 10:55	09/02/20 23:06	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U J	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U J	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	259		43 - 172	52%	SPK: 500

9/21/2020

Comments:

U = Not Detected
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P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01RE	SDG No.:	L3837
Lab Sample ID:	L3837-05RE	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012084.D	1	09/02/20 10:55	09/03/20 14:05	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U J	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U J	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	258		43 - 172	52%	SPK: 500

Do not use this form

9/21/2020

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	
Project:	RFP 631	Date Received:	09/02/20
Client Sample ID:	PB131375TB	SDG No.:	L3837
Lab Sample ID:	PB131375TB	Matrix:	TCLP
Analytical Method:	SW8151A	% Moisture:	100 Decanted:
Sample Wt/Vol:	100 Units: mL	Final Vol:	10000 uL
Soil Aliquot Vol:	uL	Test:	TCLP Herbicide
Extraction Type:		Injection Volume :	
GPC Factor :	1.0 PH :		

File ID/Qc Batch:	Dilution:	Prep Date	Date Analyzed	Prep Batch ID
PS012057.D	1	09/02/20 10:55	09/02/20 21:11	PB131375

CAS Number	Parameter	Conc.	Qualifier	MDL	LOQ / CRQL	Units
TARGETS						
94-75-7	2,4-D	6.00	U	6.00	20.0	ug/L
93-72-1	2,4,5-TP (Silvex)	2.60	U	2.60	20.0	ug/L
SURROGATES						
19719-28-9	2,4-DCAA	289		43 - 172	58%	SPK: 500

Comments:

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
E = Value Exceeds Calibration Range
P = Indicates >25% difference for detected concentrations between the two GC columns
Q = indicates LCS control criteria did not meet requirements
M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
N = Presumptive Evidence of a Compound
* = Values outside of QC limits
D = Dilution
S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.
() = Laboratory InHouse Limit

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LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/02/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-04RE	**789UMR-DSP01-02RE**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/02/20	
			TCLP Pesticide	8081B		09/02/20	09/02/20	
L3837-05RE	**789UMR-DSP02-01RE**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP Herbicide	8151A		09/02/20	09/03/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	

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LAB CHRONICLE

			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/01/20	
			PCB	8082A		08/31/20	08/31/20	
			Pesticide-TCL	8081B		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20	
			PCB	8082A		08/31/20	09/01/20	
			Pesticide-TCL	8081B		09/01/20	09/01/20	

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LAB CHRONICLE

L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**		**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20
			PCB	8082A		08/31/20	09/01/20
			Pesticide-TCL	8081B		09/01/20	09/01/20
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**		**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20
			PCB	8082A		08/31/20	08/31/20
			Pesticide-TCL	8081B		08/31/20	09/01/20
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**		**08/28/20**
			Herbicide	8151A		08/31/20	09/03/20
			PCB	8082A		08/31/20	08/31/20
			Pesticide-TCL	8081B		08/31/20	09/01/20

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CASE NARRATIVE

Weston Solutions, Inc.
Project Name: RFP 631
Project # N/A
Chemtech Project # L3837
Test Name: TCLP Mercury,TCLP ICP Metals

A. Number of Samples and Date of Receipt:
20 Solid samples were received on 08/28/2020.

B. Parameters:
According to the Chain of Custody document, the following analyses were requested: Corrosivity, Cyanide, Herbicide, Ignitability, Mercury, Metals ICP-TAL, METALS TAL+CN, PCB, Pesticide-TCL, RCRA CHARACTERISTICS, Reactive Cyanide, Reactive Sulfide, SVOC-TCL BNA -20, TCLP BNA, TCLP Extraction, TCLP Herbicide, TCLP ICP Metals, TCLP Mercury, TCLP METALS and TCLP Pesticide. This data package contains results for TCLP Mercury,TCLP ICP Metals.

C. Analytical Techniques:
The analysis of TCLP ICP Metals was based on method 6010D, digestion based on method 3010 (waters). The analysis and digestion of TCLP Mercury was based on method 7470A and TCLP extraction method was 1311.

D. QA/ QC Samples:
The Holding Times were met for all analysis.
The Blank Spike met requirements for all samples.
The Duplicate analysis met criteria for all samples.
The Matrix Spike analysis met criteria for all samples.
The Matrix Spike Duplicate analysis met criteria for all samples.
The Blank analysis did not indicate the presence of lab contamination.
The Calibration met the requirements.
The Serial Dilution met the acceptable requirements.

E. Calculation:

1. Calculation for ICP-AES TCLP Sample:

$$\text{Concentration or Result } (\mu g/L) = C \times \frac{V_f}{V_i} \times DF \times 1000$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)
V_f = Final digestion volume (mL)
V_i = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

2. Calculation for Hg TCLP Sample:

$$\text{Concentration or Result } (\mu g/L) = C \times \frac{V_f}{V_i} \times DF$$

Where,

C = Instrument value in ppb
V_f = Final digestion volume (mL)
V_i = Initial aliquot amount (mL) (Sample amount taken in prep)
DF = Dilution Factor

F. Additional Comments:

I certify that the 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. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_ N. N. Pandya

APPROVED
By Nimisha Pandya, QA/QC Supervisor at 9:55 am, Sep 15, 2020

CHEMTECH

SAMPLE DATA

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-01	SDG No.:	L3837
Lab Sample ID:	L3837-01	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	23.8	U	1	23.8	100	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7440-39-3	Barium	1220		1	113	500	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7440-43-9	Cadmium	7.11	U	1	7.11	30.0	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7440-47-3	Chromium	8.07	U	1	8.07	50.0	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7439-92-1	Lead	12.5	U	1	12.5	60.0	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7439-97-6	Mercury	0.39	U J	1	0.39	2.00	ug/L	08/31/20 11:05	09/01/20 11:10	SW7470A
7782-49-2	Selenium	25.5	U J	1	25.5	100	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010
7440-22-4	Silver	12.1	U	1	12.1	50.0	ug/L	08/31/20 10:26	08/31/20 13:41	SW6010

9/17/2020

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

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Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/25/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP01-02	SDG No.:	L3837
Lab Sample ID:	L3837-04	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	23.8	U	1	23.8	100	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7440-39-3	Barium	1220		1	113	500	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7440-43-9	Cadmium	7.11	U	1	7.11	30.0	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7440-47-3	Chromium	8.07	U	1	8.07	50.0	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7439-92-1	Lead	12.5	U	1	12.5	60.0	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7439-97-6	Mercury	0.39	U	1	0.39	2.00	ug/L	08/31/20 11:05	09/01/20 11:28	SW7470A
7782-49-2	Selenium	100 ~~29.2~~	~~J~~ U	1	25.5	100	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010
7440-22-4	Silver	12.1	U	1	12.1	50.0	ug/L	08/31/20 10:26	08/31/20 14:11	SW6010

9/17/2020

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH 284 Sheffield Street, Mountainside, NJ 07092 Phone: 908 789 8900 Fax: 908 789 8922

Report of Analysis

Client:	Weston Solutions, Inc.	Date Collected:	08/26/20
Project:	RFP 631	Date Received:	08/28/20
Client Sample ID:	789UMR-DSP02-01	SDG No.:	L3837
Lab Sample ID:	L3837-05	Matrix:	TCLP
Level (low/med):	low	% Solid:	0

Cas	Parameter	Conc.	Qua.	DF	MDL	LOQ / CRQL	Units	Prep Date	Date Ana.	Ana Met.
7440-38-2	Arsenic	23.8	U	1	23.8	100	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7440-39-3	Barium	1910		1	113	500	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7440-43-9	Cadmium	7.11	U	1	7.11	30.0	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7440-47-3	Chromium	8.07	U	1	8.07	50.0	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7439-92-1	Lead	12.5	U	1	12.5	60.0	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7439-97-6	Mercury	0.39	U	1	0.39	2.00	ug/L	08/31/20 11:05	09/01/20 11:30	SW7470A
7782-49-2	Selenium	100 ~~45.1~~	~~J~~ U	1	25.5	100	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010
7440-22-4	Silver	12.1	U	1	12.1	50.0	ug/L	08/31/20 10:26	08/31/20 14:23	SW6010

9/17/2020

Color Before:	Colorless	Clarity Before:	Clear	Texture:	
Color After:	Colorless	Clarity After:	Clear	Artifacts:	
Comments:	TCLP METALS				

U = Not Detected
LOQ = Limit of Quantitation
MDL = Method Detection Limit
LOD = Limit of Detection
D = Dilution
Q = indicates LCS control criteria did not meet requirements

J = Estimated Value
B = Analyte Found in Associated Method Blank
* = indicates the duplicate analysis is not within control limits.
E = Indicates the reported value is estimated because of the presence of interference.
OR = Over Range
N =Spiked sample recovery not within control limits

CHEMTECH

284 Sheffield Street, Mountainside, New Jersey - 07092

Phone: (908) 789 8900 Fax: (908) 789 8922

LAB CHRONICLE

OrderID:	L3837	**OrderDate:**	8/28/2020 10:56:00 AM
Client:	Weston Solutions, Inc.	**Project:**	RFP 631
Contact:	Smita Sumbaly	**Location:**	L62

LabID	ClientID	Matrix	Test	Method	Sample Date	Prep Date	Anal Date	Received
L3837-01	**789UMR-DSP01-01**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP ICP Metals	6010D		08/31/20	08/31/20	
			TCLP Mercury	7470A		08/31/20	09/01/20	
L3837-04	**789UMR-DSP01-02**	**TCLP**			**08/25/20**			**08/28/20**
			TCLP ICP Metals	6010D		08/31/20	08/31/20	
			TCLP Mercury	7470A		08/31/20	09/01/20	
L3837-05	**789UMR-DSP02-01**	**TCLP**			**08/26/20**			**08/28/20**
			TCLP ICP Metals	6010D		08/31/20	08/31/20	
			TCLP Mercury	7470A		08/31/20	09/01/20	
L3837-06	**789UMR-TP05-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-07	**789UMR-TP05-1218-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-08	**789UMR-TP05-1824-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-09	**789UMR-TP05-3036-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-10	**789UMR-TP06-0006-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	

LAB CHRONICLE

			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-11	**789UMR-TP07-1218-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-12	**789UMR-TP08-1824-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-13	**789UMR-TP11-0006-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-16	**789UMR-TP11-0006-02**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-17	**789UMR-TP11-0612-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-18	**789UMR-TP11-2430-01**	**SOIL**			**08/25/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-19	**789UMR-TP12-0002-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	
L3837-20	**789UMR-TP13-0612-01**	**SOIL**			**08/26/20**			**08/28/20**
			Mercury	7471B		08/28/20	08/31/20	
			Metals ICP-TAL	6010D		08/31/20	08/31/20	

CHEMTECH

SHIPPING DOCUMENTS

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-DSP01-01	RCRA Characteristics	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP01-01	TCLP Herbicides	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8151A
	789UMR-DSP01-01	TCLP Metals + Hg	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 6010D
	789UMR-DSP01-01	TCLP Pesticide	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8081B
	789UMR-DSP01-01	TCLP SVOCs	Soil/Rock/Slag	8/25/2020	17:05	2	8 oz glass jar	4 C	Y	SW826 8270D
	789UMR-DSP01-02	RCRA Characteristics	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP01-02	TCLP Herbicides	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-DSP01-02	TCLP Metals + Hg	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 6010D
	789UMR-DSP01-02	TCLP Pesticide	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8081B
	789UMR-DSP01-02	TCLP SVOCs	Soil/Rock/Slag	8/25/2020	17:05	1	8 oz glass jar	4 C	N	SW826 8270D
	789UMR-DSP02-01	RCRA Characteristics	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	Y	SW846 9012A, 9034, 1030, 9045C
	789UMR-DSP02-01	TCLP Herbicides	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	Y	SW826 8151A
	789UMR-DSP02-01	TCLP Metals + Hg	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	Y	SW826 6010D
	789UMR-DSP02-01	TCLP Pesticide	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	Y	SW826 8081B
	789UMR-DSP02-01	TCLP SVOCs	Soil/Rock/Slag	8/26/2020	15:25	1	8 oz glass jar	4 C	Y	SW826 8270D
	789UMR-TP05-0612-01	Herbicides	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW826 8151A

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
21/Analyses	[signature] Weston STARTV	8/27/2020 11:00	[signature]	10:15 8-28-20	IR-Gun# 4.1°C, 4.2°C

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP05-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-0612-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	12:36	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-1218-01	Herbicides	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-1218-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-1218-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-1218-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	12:45	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-1824-01	Herbicides	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-1824-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-1824-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-1824-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	13:05	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP05-3036-01	Herbicides	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP05-3036-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP05-3036-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP05-3036-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	13:18	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP06-0006-01	Herbicides	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP06-0006-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP06-0006-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP06-0006-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	09:30	1	8 oz glass jar	4 C	N	SW846 8270D

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
19/Analyses	Stephen [signature] Weston STARTV	8/27/2020 11:00	[signature]	10:15 8-28-20	JR-Gun #1 4.1°, 4.2°

L3837

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP07-1218-01	Herbicides	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP07-1218-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP07-1218-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP07-1218-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	14:40	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP08-1824-01	Herbicides	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP08-1824-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP08-1824-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP08-1824-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	12:15	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-0006-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW826 8151A
	789UMR-TP11-0006-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW846 6010D
	789UMR-TP11-0006-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW826 8081B/8081A
	789UMR-TP11-0006-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:05	2	8 oz glass jar	4 C	Y	SW846 8270D
	789UMR-TP11-0006-02	Herbicides	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-0006-02	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-0006-02	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP11-0006-02	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-0612-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW826 8081B/8081A

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
23/Analysis	Stephen Weston START V	8/27/2020 11:00	[illegible]	10:15 8-28-20	IR-Gun #1 4.1, 4.2

USEPA
DateShipped: 8/27/2020
CarrierName: FedEx
AirbillNo: 7713-7369-3249

CHAIN OF CUSTODY RECORD
Case #: 631
Contact Name: Bernard Nwosu
Contact Phone: 908-565-2980

No: 2-082720-0036-0019-02
Lab: Chemtech Consulting Group
Lab Contact: Kurt Hummler
Lab Phone: 908-728-3143

Lab #	Sample #	Analyses	Matrix	Sample Date	Sample Time	Numb Cont	Container	Preservative	Lab QC	Analytical_Method
	789UMR-TP11-0612-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:07	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP11-2430-01	Herbicides	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP11-2430-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP11-2430-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP11-2430-01	TAL SVOCs	Soil/Rock/Slag	8/25/2020	16:25	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP12-0002-01	Herbicides	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP12-0002-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP12-0002-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP12-0002-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	08:45	1	8 oz glass jar	4 C	N	SW846 8270D
	789UMR-TP13-0612-01	Herbicides	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW826 8151A
	789UMR-TP13-0612-01	TAL Metals+Hg+CN	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW846 6010D
	789UMR-TP13-0612-01	TAL Pesticides/PCBs	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW826 8081B/8081A
	789UMR-TP13-0612-01	TAL SVOCs	Soil/Rock/Slag	8/26/2020	14:55	1	8 oz glass jar	4 C	N	SW846 8270D

Special Instructions: Email results to S.Sumbaly@WestonSolutions.com, Ben.Nwosu@WestonSolutions.com, and lisichenko.peter@epa.gov

SAMPLES TRANSFERRED FROM
CHAIN OF CUSTODY #

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
13/Analysis	Weston START V	8/27/2020 11:00		10:15 8-28-20	IR-Gun #1 4.1; 4.2

From: Sumbaly, Smita <S.Sumbaly@WestonSolutions.com>
Sent: Friday, August 28, 2020 11:48
To: s.chaim@chemtech.net
Cc: kurt@chemtech.net
Subject: RE: L3738
Attachments: l3837coc2020828114_Revised.pdf

Steven - There was a data entry error. Sample 789UMR-DSP02-01 does not require analyses for MS/MSD. The attached COC has been updated to reflect this. If you have any questions please let me know.

Thanks,
Smita

Smita Sumbaly
Chemist QA/QC Specialist
Weston Solutions, Inc.
1090 King Georges Post Road
Suite 201, Edison, NJ 08837
Phone: 732-585-4410
Fax: 732-225-7037

From: Steven Chaimowitz [mailto:S.Chaim@chemtech.net]
Sent: Friday, August 28, 2020 11:32 AM
To: Sumbaly, Smita <S.Sumbaly@WestonSolutions.com>
Cc: kurt@chemtech.net
Subject: L3738

**** External Email ****
Hi Smita,
Please see the attached. Please see page 1 we have 3 samples for TCLP analysis and 2 are selected for QC. Could you please confirm if both are meant to be used for MS/MSD?

Additionally is standard TAT okay for this project or is rush TAT required?

Regards,

Steven Chaimowitz
Project Manager

CHEMTECH

284 Sheffield St. | Mountainside, NJ 07092
Direct: (908) 728-3147
s.chaim@chemtech.net | www.chemtech.net

Your Opinion Matters! Please Give Us Your Feedback

CHEMTECH
284 Sheffield Street,
Mountainside, New Jersey 07092
Phone: (908) 789 8900
Fax: (908) 789 8922

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Laboratory Certification

Certified By	License No.
CAS EPA CLP Contract	EP-W-14-030
Connecticut	PH-0649
DOD ELAP (L-A-B)	L2219
Maine	2020021
Maryland	296
New Hampshire	255420
New Jersey	20012
New York	11376
Pennsylvania	68-00548
Soil Permit	P330-18-00132
Texas	T104704488-20-13

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
ATTN: Ms. Smita Sumbaly
S.Sumbaly@WestonSolutions.com

November 23, 2020

SUBJECT: 789 Upper Mountain Road Site, Data Validation

Dear Ms. Sumbaly,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on November 2, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49571:

SDG #	**Fraction**
160-39120-1	Isotopic Uranium & Isotopic Thorium, Gamma Spectroscopy

The data validation was performed under Level IV guidelines. The analyses were validated using the following documents as applicable to each method:

- Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York, October 2019
- Multi Agency Radiological Laboratory Analytical Protocols, Manual, July 2004
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

44 pages-ADV EDD printout Attachment 1

Level IV EDD

LDC #49571 (Weston Solutions, Inc.- Edison, NJ / 789 Upper Mountain Road)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Isotopic Uranium (6020A)		Thorium (6020A)		Gamma Emmitting (GA-01-R)		Isotopic U (A-01-R)		Isotopic Th (A-01-R)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	160-39120-1	11/02/20	11/23/20	0	16	0	16	0	16	0	16	0	16																						
Total	J/PG			0	16	0	16	0	16	0	16	0	16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	80

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

L:\Weston Solutions\Upper Mountain\49571ST.wpd

LDC Report# 49571A4a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 23, 2020

Parameters: Isotopic Uranium & Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39120-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20
789UMR-TP01-1218-01MS	160-39120-1MS	Soil	08/11/20
789UMR-TP01-1218-01MSD	160-39120-1MSD	Soil	08/11/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium and Thorium by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits.

Although the low level check standard exceeded QC limits for uranium-238, no data was qualified since all associated results were greater than 2X reporting limit (RL).

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Uranium-238	0.0318 mg/Kg	All samples in SDG 160-39120-1

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks.

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits. Relative percent differences (RPD) were within QC limits.

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples 789UMR-TP03-1526-01 and 789UMR-TP03-1526-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD
	789UMR-TP03-1526-01	789UMR-TP03-1526-02	
Thorium	36	65	57
Uranium-235	0.44	0.77	55
Uranium-238	55	100	58

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results rejected in this SDG.

The quality control criteria reviewed were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Laboratory Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Field Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

LDC #: 49571A4a
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/6/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	A	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	A	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(9,10)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
2	789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
3	789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
4	789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
5	789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
6	789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
7	789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
8	789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
9	789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
10	789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
11	789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
12	789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
13	789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
14	789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
15	789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20

LDC #: 49571A4a
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/6/20

Reviewer: GT
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6020A)

16	789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20
17	789UMR-TP01-1218-01MS	160-39120-1MS	Soil	08/11/20
18	789UMR-TP01-1218-01MSD	160-39120-1MSD	Soil	08/11/20
19				
20				
21				

Notes:

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times met?	X			
Were all water samples preserved to a pH of <2.			X	
II. ICP-MS Tune				
Were mass resolutions within 0.1 amu for all isotopes in the tuning solution?	X			
Were %RSDs of isoptoes in the tuning solution ≤5%?	X			
III. Calibration				
Were all instuments calibrated daily?	X			
Were the proper standards used?	X			
Were all initial and continuing calibration verifications within the 90-110% (80-120% for mercury) QC limits?	X			
Were the low level standard checks within 70-130%?	X			
Were all initial calibration correlation coefficients within limits as specifed by the method?	X			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	X			
Was there contamination in the method blanks?	X			
Was there contamination in the initial and continuing calibration blanks?		X		
V. Interference Check Sample				
Were the interference check samples performed daily?	X			
Were the AB solution recoveries within 80-120%?	X			
VI. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	X			
VII. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)				
Validation Area	**Yes**	**No**	**NA**	**Comments**
VIII. Internal Standards				
Were all percent recoveries within the 30-120% (60-125% for EPA Method 200.8) QC limits?	X			
If the recoveries were outside the limits, was a reanalysis performed?			X	
IX. Serial Dilution				
Were all percent differences <10%?	X			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		X		
X. Sample Result Verification				
Were all reporting limits adjusted to reflect sample dilutions?	X			
Were all soil samples dry weight corrected?		X		All results based on wet weight.
XI. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
XII. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
XIII. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer:CR

All elements are applicable to each sample as noted below.

Sample ID	Target Analyte List
All	Th, U-233, U-234, U-235, U-236, U-238
QC: 17, 18	Th, U-234, U-235, U-238

Analysis Method

ICP	
ICP-MS	Th, U-233, U-234, U-235, U-236, U-238
CVAA	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Soil preparation factor applied (if applicable):

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:All

				Sample Identification								
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (units)**	**Action Level**									
U-238	0.0318		0.318									

Comments: The listed analyte concentrtaion is the highest ICB or CCB detected in the analysis. The action level, when applicable, is established at 5X the highest ICB, CCB, or PB concentration.

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:CR

Method: Metals

Analyte	Concentration (mg/Kg)		RPD (≤ 30)
	9	10	
Thorium	36	65	57
Uranium-235	0.44	0.77	55
Uranium-238	55	100	58

VALIDATION FINDINGS CHECKLIST

Calibration Calculation Verification

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

An intial calibration verification (ICV), continuing calibration verification (CCV), low level calibration check (LLCC), and interference check sample (ICSAB) percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis

True = concentration of each analyte in the source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalcuated %R	Reported %R	Acceptable (Y/N)
ICV	ICP-MS	U-233	0.101	0.107	94	95	Y
CCV	ICP-MS	U-236	0.25	0.254	98	99	Y
LLCC	ICP-MS	Th	1.98	2	99	99	Y
ICSAB	ICP-MS	Th	52.3	50	105	105	Y

ICP-MS Tune	QC Parameter	Mass	Actual	Required
9/22/2020	Mass Axis	205	205	± 0.1 amu
9/22/2020	%RSD	205	2.17	≤ 5%

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and post digestion spike (PDS) were recalculated using the following formula:

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentration of each analyte in the source

The sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentration

D = Duplicate sample concentration

The serial dilution percent difference (%D) was recalculated using the following formula.

%D = (Absolute value (I - SDR)) x 100 / (I)

I = Initial sample result

SDR = Serial dilution result (with a 5x dilution applied)

Sample ID	Type of Analysis	Element	Found/S/I	True/D/SDR	Recalcuated %R/RPD/%D	Reported %R/RPD/%D	Acceptable (Y/N)
LCS	LCS	Th	83.3	86.7	96	96	Y
17	MS	U-235	0.431	0.448	96	96	Y
17, 18	Duplicate	U-238	3.42	3.41	0	0	Y
1	Serial dilution	U-238	3	3.08	2.7	2.6	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Analytes were recalculated and verified using the following equation:

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids x Initial weight)

Sample ID	Analyte	Raw Data (ug/L)	Dilution	Initial Weight (g)	Final Volume (mL)	Reported Result (mg/Kg)	Recalcuated Result (mg/Kg)	Acceptable (Y/N)
1	Th	2.242	50	0.5816	50	9.6	9.6	Y
2	U-235	0.04761	20	0.5629	50	0.085	0.085	Y
3	U-238	12.93522	20	0.549	50	24	24	Y
4	Th	16.611	50	0.572	50	73	73	Y
5	U-235	0.0778	20	0.589	50	0.13	0.13	Y
6	U-238	1.28122	20	0.5718	50	2.2	2.2	Y
7	Th	6.69	50	0.5282	50	33	32	Y
8	U-235	0.0878	20	0.5251	50	0.17	0.17	Y
9	U-238	29.88967	20	0.5395	50	55	55	Y
10	Th	14.607	50	0.5655	50	65	65	Y
11	U-235	0.07143	20	0.5662	50	0.13	0.13	Y
12	U-238	6.08712	20	0.5367	50	11	11	Y
13	Th	28.037	50	0.5371	50	130	131	Y
14	U-235	0.46563	20	0.5205	50	0.9	0.9	Y
15	U-238	23.07361	20	0.564	50	41	41	Y
16	Th	9.926	50	0.5566	50	45	45	Y

LDC Report# 49571A35

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 23, 2020

Parameters: Gamma Spectroscopy

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39120-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20
789UMR-TP01-1218-01DUP	160-39120-1DUP	Soil	08/11/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Gamma Spectroscopy by Method GA-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Radium-224 Lead-212	0.1052 pCi/g 0.1052 pCi/g	All samples in SDG 160-39120-1

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Isotope	DER (Limits)	Flag	A or P
789UMR-TP01-1218-01DUP (All samples in SDG 160-39120-1)	Bismuth-212	4.19 (≤3)	J (all detects) UJ (all non-detects)	A

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP03-1526-01 and 789UMR-TP03-1526-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP03-1526-01	789UMR-TP03-1526-02	
Actinium-228	489	453	8
Radium-224	528	494	7
Radium-226	95.9	86.7	10
Radium-228	489	453	8
Thallium-208	172	155	10
Bismuth-212	509	457	11
Bismuth-214	95.9	86.7	10
Cesium-137	-0.829U	1.29	Not calculable
Lead-212	528	494	7
Lead-214	99.0	90.5	9
Potassium-40	7.29U	16.3	Not calculable

X. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
789UMR-TP03-0026-01	Radium-226	1.41 pCi/g	1.00 pCi/g
789UMR-TP03-1526-01	Radium-226	2.2 pCi/g	1.00 pCi/g
789UMR-TP03-1526-02	Radium-226	1.88 pCi/g	1.00 pCi/g
789UMR-TP04-0006-01	Radium-226	1.21 pCi/g	1.00 pCi/g
789UMR-TP04-1218-01	Radium-226	1.64 pCi/g	1.00 pCi/g
789UMR-TP04-1824-01	Radium-226	1.82 pCi/g	1.00 pCi/g
789UMR-TP04-2430-01	Radium-226	1.64 pCi/g	1.00 pCi/g
789UMR-TP04-3648-01	Radium-226	2.15 pCi/g	1.00 pCi/g

The MDC was greater than the RL as listed above.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to DUP DER, data were qualified as estimated in sixteen samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Gamma Spectroscopy - Data Qualification Summary - SDG 160-39120-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP01-1218-01 789UMR-TP02-0006-01 789UMR-TP02-0612-01 789UMR-TP02-1218-01 789UMR-TP02-1824-01 789UMR-TP02-2430-01 789UMR-TP03-0015-01 789UMR-TP03-0026-01 789UMR-TP03-1526-01 789UMR-TP03-1526-02 789UMR-TP04-0006-01 789UMR-TP04-0612-01 789UMR-TP04-1218-01 789UMR-TP04-1824-01 789UMR-TP04-2430-01 789UMR-TP04-3648-01	Bismuth-212	J (all detects) UJ (all non-detects)	A	Duplicate sample analysis (DER)

789 Upper Mountain Road Site
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

789 Upper Mountain Road Site
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

LDC #: 49571A~~29a~~ 35
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: ~~Radium 226 & Other Gamma Emitters~~ (Method GA-01-R)
Gamma Spectroscopy

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	SW	
VIII.	Laboratory control samples	A	(LCS)
IX.	Field duplicates	SW	(9,10)
~~X.~~	~~Carrier recovery~~		
XI.	Minimum detectable ~~activity~~ (MDA)	SW	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
2	789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
3	789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
4	789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
5	789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
6	789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
7	789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
8	789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
9	789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
10	789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
11	789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
12	789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
13	789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
14	789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
15	789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
16	789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20

LDC #: 49571A29a
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: Radium 226 & Other Gamma Emitters (Method GA-01-R)

17	789UMR-TP01-12 18-01DUP	160-39120-1DUP	Soil	08/11/20
18				
19				
20				

Notes:

Reviewer:CR

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	X			
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?	X			
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted: pCi/g Associated Samples:All

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
Ra-224	0.1052										
Pb-212	0.1052										

VALIDATION FINDINGS WORKSHEETS

Laboratory Duplicates

Reviewer:CR

METHOD: Radiochemistry

Laboratory duplicate analysis was performed by the laboratory. All laboratory duplicates were with the relative percent difference (RPD) for samples >5X the reporting limits with the exceptions listed below. If samples were <5X the reproting limits, the duplciate error ration (DER) was used to evaluated with a limit of ≤3.

Duplicate ID	Matrix	Isotope	RPD	RPD Limit	DER	RER Limt	Assocaited Samples	Qualification	Det/ND
17	s	Bi-212			4.19	≤3	All	J/UJ/A	Det/ND

Comments:

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	9	10	
Actinium-228	489	453	8
Radium-224	528	494	7
Radium-226	95.9	86.7	10
Radium-228	489	453	8
Thallium-208	172	155	10
Bismuth-212	509	457	11
Bismuth-214	95.9	86.7	10
Cesium-137	-0.829U	1.29	NC
Lead-212	528	494	7
Lead-214	99.0	90.5	9
Potassium-40	7.29U	16.3	NC

VALIDATION FINDINGS WORKSHEETS

Minimal Detectable Concentration

Reviewer:CR

METHOD: Radiochemsitry

All requested minimal detectable concentrations (MDC) were met with the following exceptions.

Sample ID	Isotope	QAPP RL (pCi/g)	Laboratory MDC (pCi/g)	Qualification
8	Ra-226	1.00	1.41	Text
9	Ra-226	1.00	2.2	Text
10	Ra-226	1.00	1.88	Text
11	Ra-226	1.00	1.21	Text
13	Ra-226	1.00	1.64	Text
14	Ra-226	1.00	1.82	Text
15	Ra-226	1.00	1.64	Text
16	Ra-226	1.00	2.15	Text

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Co-60	9.669	9.69	100	100	Y
17	Duplicate	K-40	15.2	15.86	4	5	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer: CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (Bq)	Dilution	Initial Weight (g)	Final Volume (unit)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Ac-228	5.403		249.3		0.586	0.586	Y
2	Ra-224	320.21		255.9		33.8	33.8	Y
3	Ra-226	284.6		341.9		22.5	22.5	Y
4	Ra-228	904.71		329.3		74.3	74.3	Y
5	Tl-208	155.31		299.2		14	14.0	Y
6	Bi-214	7.6859		158.2		1.12	1.31	Y
7	Bi-212	706.8		233		82	82	Y
8	Cs-137	12.95		217.3		1.61	1.61	Y
9	Pb-212	5402		276.3		528	528	Y
10	Pb-214	945.8		282.6		90.5	90.5	Y
11	K-40	208.9		190		29.7	29.7	Y
12	Ac-228	374		210.3		48.1	48.1	Y
13	Ra-224	1683		254.5		179	179	Y
14	Pa-234	35.68		241.2		4	4.0	Y
15	Th-234	577.9		292.4		53.4	53.4	Y
16	K-40	461.7		235.4		53	53.0	Y

LDC Report# 49571A59

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 23, 2020

Parameters: Isotopic Uranium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39120-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20
789UMR-TP01-1218-01MS	160-39120-1MS	Soil	08/11/20
789UMR-TP01-1218-01MSD	160-39120-1MSD	Soil	08/11/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC).

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP03-1526-01 and 789UMR-TP03-1526-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP03-1526-01	789UMR-TP03-1526-02	
Uranium-233/234	53.1	67.2	23
Uranium-235/236	2.99	3.97	28
Uranium-238	54.3	70.0	25

X. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
789UMR-TP03-1526-01	Uranium-232	29.4 (30-110)	Isotopic uranium	J (all detects)	A
789UMR-TP03-1526-02	Uranium-232	23.0 (30-110)	Isotopic uranium	J (all detects)	A
789UMR-TP04-1824-01	Uranium-232	27.7 (30-110)	Isotopic uranium	J (all detects)	A

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to tracer recovery %R, data were qualified as estimated in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Uranium - Data Qualification Summary - SDG 160-39120-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP03-1526-01 789UMR-TP03-1526-02 789UMR-TP04-1824-01	Isotopic uranium	J (all detects)	A	Tracer recoveries (%R)

789 Upper Mountain Road Site
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

789 Upper Mountain Road Site
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

LDC #: 49571A59
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Uranium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	A	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	A	
VII.	Duplicates	N	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(9,10)
X.	Tracer Recovery	SW	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
2	789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
3	789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
4	789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
5	789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
6	789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
7	789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
8	789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
9	789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
10	789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
11	789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
12	789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
13	789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
14	789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
15	789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
16	789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20

LDC #: 49571A59
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20

Reviewer:
2nd Reviewer:

METHOD: Isotopic Uranium (Method A-01-R)

17	789UMR-TP01-12 18-01MS	160-39120-1MS	Soil	08/11/20
18	789UMR-TP01-12 18-01MSD	160-39120-1MSD	Soil	08/11/20
19				
20				
21				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?		X		
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?	X			
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?		X		
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	9	10	
U-233/234	53.1	67.2	23
U-235/236	2.99	3.97	28
U-238	54.3	70.0	25

Chemical Recovery

Reviewer:CR

METHOD: Radiochemistry

A LCS was analzyed for each matrix at the requried frequencies. All LCS percent recoveries (%R) were within the acceptable limits with the following exceptions.

Tracer	Matrix	Associated Isotope	Tracer %R	%R Limit	Assocaited Samples	Qualification	Det/ND
U-232	s	All isotopic U	29.4	30-110	9	J/UJ/P	Det
U-232	s	All isotopic U	23.0	30-110	10	J/UJ/P	Det
U-232	s	All isotopic U	27.7	30-110	14	J/UJ/P	Det

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	U-233/234	5.94	6.34	94	93	Y
17	MS	U-233/234	6.055	6.38	95	95	Y
17/18	Duplicate	U-238	7.178	7.556	5	5	Y
16	Chemical recovery	U-232	1.85	5.49	33.7	33.5	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	U-233/234	100.5	99.8	1.01	240	25.34	95.41	0.777	0.774	Y
2	U-235/236	41.75	80.2	1	240	26.8	88.33	0.412	0.413	Y
3	U-238	1043	100	0.99	240	23.25	73.34	11.6	11.6	Y
4	U-233/234	1298.5	99.8	0.99	240	22.54	79.99	13.6	13.7	Y
5	U-235/236	26	80.2	1	240	22.42	100.53	0.271	0.270	Y
6	U-238	84.75	100	0.99	240	27.56	86.42	0.672	0.675	Y
7	U-233/234	937.75	99.8	1	240	27.93	65.73	9.59	9.61	Y
8	U-235/236	47.5	80.2	1.01	240	26.55	53.76	0.773	0.771	Y
9	U-238	5509.38	100	1.01	600	25.68	29.4	54.3	54.2	Y
10	U-233/234	5577	99.8	1	600	27.22	22.99	67.2	67.0	Y
11	U-235/236	42.75	80.2	1	240	24.34	75.6	0.545	0.544	Y
12	U-238	798.25	100	1	240	27.37	76.92	7.11	7.12	Y
13	U-233/234	1522.75	99.8	1.01	240	26.76	53.48	19.9	19.8	Y
14	U-235/236	298.38	80.2	1	600	27.04	27.66	3.74	3.73	Y
15	U-238	4660.75	100	1	600	25.8	41.13	33.1	33.0	Y
16	U-233/234	5263.38	99.8	1	600	28.55	33.49	41.5	41.4	Y

LDC Report# 49571A73

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 23, 2020

Parameters: Isotopic Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39120-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20
789UMR-TP01-1218-01MS	160-39120-1MS	Soil	08/11/20
789UMR-TP01-1218-01MSD	160-39120-1MSD	Soil	08/11/20
789UMR-TP02-0612-01DUP	160-39120-3DUP	Soil	08/11/20
789UMR-TP03-1526-02DUP	160-39120-10DUP	Soil	08/11/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Thorium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Thorium-230	0.4279 pCi/g	789UMR-TP02-0612-01 789UMR-TP02-1218-01 789UMR-TP03-0015-01 789UMR-TP03-0026-01 789UMR-TP03-1526-01 789UMR-TP04-0006-01 789UMR-TP04-0612-01 789UMR-TP04-1218-01 789UMR-TP04-1824-01 789UMR-TP04-2430-01 789UMR-TP04-3648-01
PB (prep blank)	Thorium-230	7.411 pCi/g	789UMR-TP03-1526-02

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks with the following exceptions:

Sample	Isotope	Reported Concentration	Modified Final Concentration
789UMR-TP03-1526-02	Thorium-230	66.7 pCi/g	66.7J pCi/g

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
789UMR-TP01-1218-01MS/MSD (789UMR-TP01-1218-01 789UMR-TP02-0006-01 789UMR-TP02-1824-01 789UMR-TP02-2430-01)	Thorium-230	119 (76-115)	118 (76-115)	J (all detects)	A

Relative percent differences (RPD) were within QC limits.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP03-1526-01 and 789UMR-TP03-1526-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP03-1526-01	789UMR-TP03-1526-02	
Thorium-228	197	420	72
Thorium-230	37.0	66.7	57
Thorium-232	182	404	76

X. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
789UMR-TP04-0612-01	Thorium-229	113 (30-110)	Isotopic thorium	J (all detects)	A

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
789UMR-TP03-1526-01	Thorium-228 Thorium-230 Thorium-232	3.28 pCi/g 2.57 pCi/g 2.56 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP04-0006-01	Thorium-230	1.45 pCi/g	1.00 pCi/g
789UMR-TP04-1824-01	Thorium-228 Thorium-230 Thorium-232	3.80 pCi/g 2.69 pCi/g 2.39 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP04-2430-01	Thorium-228 Thorium-230 Thorium-232	2.57 pCi/g 1.32 pCi/g 1.42 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP04-3648-01	Thorium-228 Thorium-230 Thorium-232	3.98 pCi/g 1.15 pCi/g 1.85 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP03-1526-02	Thorium-228 Thorium-230 Thorium-232	8.21 pCi/g 3.28 pCi/g 3.27 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g

The MDC was greater than the RL as listed above.

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and tracer recovery %R, data were qualified as estimated in five samples.

Due to laboratory blank contamination, data were qualified as estimated in one sample.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Thorium - Data Qualification Summary - SDG 160-39120-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP01-1218-01 789UMR-TP02-0006-01 789UMR-TP02-1824-01 789UMR-TP02-2430-01	Thorium-230	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
789UMR-TP04-0612-01	Isotopic thorium	J (all detects)	A	Tracer recoveries (%R)

789 Upper Mountain Road Site
Isotopic Thorium - Laboratory Blank Data Qualification Summary - SDG 160-39120-1

Sample	Isotope	Modified Final Activity	A or P
789UMR-TP03-1526-02	Thorium-230	66.7J pCi/g	A

789 Upper Mountain Road Site
Isotopic Thorium - Field Blank Data Qualification Summary - SDG 160-39120-1

No Sample Data Qualified in this SDG

LDC #: 49571A73
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Thorium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A /A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	SW	
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	(LCS)
IX.	Field duplicates	SW	(9,10)
X.	Tracer Recovery	SW	
XI.	Minimum detectable ~~activity~~ concentration (MDC)	SW	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable
N = Not provided/applicable
SW = See worksheet
ND = No compounds detected
R = Rinsate
FB = Field blank
D = Duplicate
TB = Trip blank
EB = Equipment blank
SB=Source blank
OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP01-1218-01	160-39120-1	Soil	08/11/20
2	789UMR-TP02-0006-01	160-39120-2	Soil	08/11/20
3	789UMR-TP02-0612-01	160-39120-3	Soil	08/11/20
4	789UMR-TP02-1218-01	160-39120-4	Soil	08/11/20
5	789UMR-TP02-1824-01	160-39120-5	Soil	08/11/20
6	789UMR-TP02-2430-01	160-39120-6	Soil	08/11/20
7	789UMR-TP03-0015-01	160-39120-7	Soil	08/11/20
8	789UMR-TP03-0026-01	160-39120-8	Soil	08/11/20
9	789UMR-TP03-1526-01	160-39120-9	Soil	08/11/20
10	789UMR-TP03-1526-02	160-39120-10	Soil	08/11/20
11	789UMR-TP04-0006-01	160-39120-11	Soil	08/11/20
12	789UMR-TP04-0612-01	160-39120-12	Soil	08/11/20
13	789UMR-TP04-1218-01	160-39120-13	Soil	08/11/20
14	789UMR-TP04-1824-01	160-39120-14	Soil	08/11/20
15	789UMR-TP04-2430-01	160-39120-15	Soil	08/11/20
16	789UMR-TP04-3648-01	160-39120-16	Soil	08/11/20

LDC #: 49571A73
SDG #: 160-39120-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/9/20
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Thorium (Method A-01-R)

17	789UMR-TP01-1218-01MS	160-39120-1MS	Soil	08/11/20
18	789UMR-TP01-1218-01MSD	160-39120-1MSD	Soil	08/11/20
19	789UMR-TP02-0612-01DUP	160-39120-3DUP	Soil	08/11/20
20	789UMR-TP03-1526-02DUP	160-39120-10DUP	Soil	08/11/20
21				
22				
23				

Notes:

Reviewer:CR

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?		X		
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?		X		
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted: pCi/g Associated Samples: 3, 4, 7-9, 11-16

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
Th-230	0.4279										

Sample Concentration, unless otherwise noted: pCi/g Associated Samples: 10

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	10								
Th-230	7.411	74.11	66.7 J								

Comments: The listed analyte concentrtaion is the highest ICB or CCB detected in the analysis. The action level, when applicable, is

Matrix Spike/Matrix Spike Duplicates

Reviewer:CR

METHOD: Radiochemistry

MS/MSD analysis was performed by the laboratory. All MS/MSD percent recoveries (%R) and relative percent differences (RPDs) were within the acceptable limits with the following exceptions.

MS/MSD ID	Matrix	Isotope	MS %R	MSD %R	%R Limit	RPD	RPD Limit	Assocaited Samples	Qualification	Det/ND
17, 18	s	Th-230	119	118	76-115			1, 2, 5, 6	Jdet/A	Det

Comments:

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	9	10	
Th-228	197	420	72
Th-230	37.0	66.7	57
Th-232	182	404	76

Chemical Recovery

METHOD: Radiochemistry

A LCS was analzyed for each matrix at the requried frequencies. All LCS percent recoveries (%R) were within the acceptable limits with the following exceptions.

Tracer	Matrix	Associated Isotope	Tracer %R	%R Limit	Assocaited Samples	Qualification	Det/ND
Th-229	s	All isotopic Th	113	30-110	12	J/UJ/P	Det

Comments:

VALIDATION FINDINGS WORKSHEETS

Minimal Detectable Concentration

Reviewer:CR

METHOD: Radiochemsitry

All requested minimal detectable concentrations (MDC) were met with the following exceptions.

Sample ID	Isotope	QAPP RL (pCi/g)	Laboratory MDC (pCi/g)	Qualification
9	Th-228	1.00	3.28	Text
9	Th-230	1.00	2.57	
9	Th-232	1.00	2.56	
11	Th-230	1.00	1.45	
14	Th-228	1.00	3.80	
14	Th-230	1.00	2.69	
14	Th-232	1.00	2.39	
15	Th-228	1.00	2.57	
15	Th-230	1.00	1.32	
15	Th-232	1.00	1.42	
16	Th-228	1.00	3.98	
16	Th-230	1.00	1.15	
16	Th-232	1.00	1.85	
10	Th-228	1.00	8.21	
10	Th-230	1.00	3.28	
10	Th-232	1.00	3.27	

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Th-230	23.5	24.5	96	96	Y
17	MS	Th-230	4.752	4	119	119	Y
19	Duplicate	Th-228	40.1	56.24	34	34	Y
1	Chemical recovery	Th-229	4.49	5.97	75.2	75.3	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Th-229 correction	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Th-228	99.25	99.8	0.9982	240	27.77	75.27	0.03914	0.856	0.855	Y
2	Th-230	512.5	99.7	0.9973	240	26.51	71.31	0.095339	5.02	5.02	Y
3	Th-228	1101.25	99.8	0.1982	240	27.77	93.94	0	40.1	40.1	Y
4	Th-230	401.25	99.7	0.1991	240	26.32	90.38	0	15.9	15.9	Y
5	Th-232	2419	100.2	1.0015	240	26.77	54.76	0.0071	30.9	30.9	Y
6	Th-228	144.5	99.8	1.007	240	24.22	72.75	0.03914	1.47	1.49	Y
7	Th-232	1346.75	100.2	0.201	240	26.51	85.14	0	55.6	55.6	Y
8	Th-228	1572.75	99.8	0.1003	240	24.89	91.54	0	130	129	Y
9	Th-230	96	99.7	0.0201	240	26.77	90.77	0	37.0	37.0	Y
10	Th-232	371	100.2	0.010086	240	27.04	63.08	0	404	404	Y
11	Th-232	1651.25	100.2	0.2018	240	24.22	79.28	0	78.6	79.8	Y
12	Th-228	586.75	99.8	0.1008	240	22.68	113.22	0	42.6	42.6	Y
13	Th-230	152.25	99.7	0.0399	240	26.32	92.42	0	29.5	29.5	Y
14	Th-232	1227	100.2	0.0201	240	25.17	103.65	0	438	438	Y
15	Th-228	1182	99.8	0.04	240	27.15	81.04	0	253	253	Y
16	Th-230	204	99.7	0.02	240	26.84	91.32	0	78.4	78.3	Y

789 Upper Mountain - LDC# 49571

SDG: 160-39120-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP01-1218-01	160-39120-1	Thorium	9/21/2020	9.6					4.3	2.9	mg/Kg
789UMR-TP01-1218-01	160-39120-1	U-233	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP01-1218-01	160-39120-1	U-234	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP01-1218-01	160-39120-1	U-235	9/22/2020	0.029	J		J		0.05	0.026	mg/Kg
789UMR-TP01-1218-01	160-39120-1	U-236	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP01-1218-01	160-39120-1	U-238	9/22/2020	3	B				0.05	0.026	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP01-1218-01	160-39120-1	Thorium-228	10/14/2020	0.856				0.2	0.11		pCi/g
789UMR-TP01-1218-01	160-39120-1	Thorium-230	10/14/2020	0.868		J	J	0.21	0.13		pCi/g
789UMR-TP01-1218-01	160-39120-1	Thorium-232	10/14/2020	1.03				0.212	0.06		pCi/g
789UMR-TP01-1218-01	160-39120-1	Uranium-233/234	9/24/2020	0.777				0.17	0.06		pCi/g
789UMR-TP01-1218-01	160-39120-1	Uranium-235/236	9/24/2020	0.0313	U		U	0.045	0.07		pCi/g
789UMR-TP01-1218-01	160-39120-1	Uranium-238	9/24/2020	0.847				0.177	0.03		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP01-1218-01	160-39120-1	Actinium 228	10/8/2020	0.586				0.376	0.38		pCi/g
789UMR-TP01-1218-01	160-39120-1	Bismuth-212	10/8/2020	0.373	U	UJ	UJ	0.685	1.17		pCi/g
789UMR-TP01-1218-01	160-39120-1	Bismuth-214	10/8/2020	0.825				0.198	0.15		pCi/g
789UMR-TP01-1218-01	160-39120-1	Cesium-137	10/8/2020	1.16				0.183	0.04		pCi/g
789UMR-TP01-1218-01	160-39120-1	Lead-212	10/8/2020	0.949				0.181	0.10		pCi/g
789UMR-TP01-1218-01	160-39120-1	Lead-214	10/8/2020	1.02				0.195	0.18		pCi/g
789UMR-TP01-1218-01	160-39120-1	Potassium-40	10/8/2020	15.2				2.48	0.93		pCi/g
789UMR-TP01-1218-01	160-39120-1	Protactinium-234	10/8/2020	-0.146	U		U	0.435	0.72		pCi/g
789UMR-TP01-1218-01	160-39120-1	Radium-224	10/8/2020	0.949				0.181	0.10		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP01-1218-01	160-39120-1	Radium-226	10/8/2020	0.825				0.198	0.15		pCi/g
789UMR-TP01-1218-01	160-39120-1	Radium-228	10/8/2020	0.586				0.376	0.38		pCi/g
789UMR-TP01-1218-01	160-39120-1	Thallium-208	10/8/2020	0.327				0.0985	0.07		pCi/g
789UMR-TP01-1218-01	160-39120-1	Thorium-234	10/8/2020	1.25				0.725	1.1		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-02	160-39120-10	Thorium	9/21/2020	65					4.4	3	mg/Kg
789UMR-TP03-1526-02	160-39120-10	U-233	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP03-1526-02	160-39120-10	U-234	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP03-1526-02	160-39120-10	U-235	9/22/2020	0.77					0.05	0.027	mg/Kg
789UMR-TP03-1526-02	160-39120-10	U-236	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP03-1526-02	160-39120-10	U-238	9/22/2020	100	B				0.05	0.027	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-02	160-39120-10	Thorium-228	10/28/2020	420	G			55.6	8.21		pCi/g
789UMR-TP03-1526-02	160-39120-10	Thorium-230	10/28/2020	66.7	G	J	J	18	3.28		pCi/g
789UMR-TP03-1526-02	160-39120-10	Thorium-232	10/28/2020	404	G			53.9	3.27		pCi/g
789UMR-TP03-1526-02	160-39120-10	Uranium-233/234	9/29/2020	67.2		J	J	5.92	0.03		pCi/g
789UMR-TP03-1526-02	160-39120-10	Uranium-235/236	9/29/2020	3.97		J	J	0.591	0.04		pCi/g
789UMR-TP03-1526-02	160-39120-10	Uranium-238	9/29/2020	70		J	J	6.16	0.03		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-02	160-39120-10	Actinium 228	10/8/2020	453				46.3	2.32		pCi/g
789UMR-TP03-1526-02	160-39120-10	Bismuth-212	10/8/2020	457		J	J	49.6	11.8		pCi/g
789UMR-TP03-1526-02	160-39120-10	Bismuth-214	10/8/2020	86.7				9.33	1.88		pCi/g
789UMR-TP03-1526-02	160-39120-10	Cesium-137	10/8/2020	1.29				0.589	0.92		pCi/g
789UMR-TP03-1526-02	160-39120-10	Lead-212	10/8/2020	494				64	1.46		pCi/g
789UMR-TP03-1526-02	160-39120-10	Lead-214	10/8/2020	90.5				9.59	2.27		pCi/g
789UMR-TP03-1526-02	160-39120-10	Potassium-40	10/8/2020	16.3				7.95	7.45		pCi/g
789UMR-TP03-1526-02	160-39120-10	Protactinium-234	10/8/2020	2.22	U		U	3.59	8.3		pCi/g
789UMR-TP03-1526-02	160-39120-10	Radium-224	10/8/2020	494				64	1.46		pCi/g
789UMR-TP03-1526-02	160-39120-10	Radium-226	10/8/2020	86.7	G			9.33	1.88		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-02	160-39120-10	Radium-228	10/8/2020	453				46.3	2.32		pCi/g
789UMR-TP03-1526-02	160-39120-10	Thallium-208	10/8/2020	155				16.2	1.09		pCi/g
789UMR-TP03-1526-02	160-39120-10	Thorium-234	10/8/2020	28.2	U		U	6.13	46.5		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0006-01	160-39120-11	Thorium	9/21/2020	110					4.4	3	mg/Kg
789UMR-TP04-0006-01	160-39120-11	U-233	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP04-0006-01	160-39120-11	U-234	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP04-0006-01	160-39120-11	U-235	9/22/2020	0.13					0.05	0.026	mg/Kg
789UMR-TP04-0006-01	160-39120-11	U-236	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP04-0006-01	160-39120-11	U-238	9/22/2020	18	B				0.05	0.026	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0006-01	160-39120-11	Thorium-228	10/16/2020	80.3				7.8	0.42		pCi/g
789UMR-TP04-0006-01	160-39120-11	Thorium-230	10/16/2020	58.4	G			8.48	1.45		pCi/g
789UMR-TP04-0006-01	160-39120-11	Thorium-232	10/16/2020	78.6				7.65	0.29		pCi/g
789UMR-TP04-0006-01	160-39120-11	Uranium-233/234	9/24/2020	11.8				1.21	0.07		pCi/g
789UMR-TP04-0006-01	160-39120-11	Uranium-235/236	9/24/2020	0.545				0.174	0.06		pCi/g
789UMR-TP04-0006-01	160-39120-11	Uranium-238	9/24/2020	11.7				1.2	0.06		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0006-01	160-39120-11	Actinium 228	10/8/2020	89.3				9.65	1.76		pCi/g
789UMR-TP04-0006-01	160-39120-11	Bismuth-212	10/8/2020	90.1		J	J	12.2	7.8		pCi/g
789UMR-TP04-0006-01	160-39120-11	Bismuth-214	10/8/2020	20.7				2.54	1.21		pCi/g
789UMR-TP04-0006-01	160-39120-11	Cesium-137	10/8/2020	0.0886	U		U	0.661	1.11		pCi/g
789UMR-TP04-0006-01	160-39120-11	Lead-212	10/8/2020	108				14.1	0.98		pCi/g
789UMR-TP04-0006-01	160-39120-11	Lead-214	10/8/2020	23.5				2.76	1.15		pCi/g
789UMR-TP04-0006-01	160-39120-11	Potassium-40	10/8/2020	29.7				6.85	4.47		pCi/g
789UMR-TP04-0006-01	160-39120-11	Protactinium-234	10/8/2020	0.742	U		U	3.49	5.78		pCi/g
789UMR-TP04-0006-01	160-39120-11	Radium-224	10/8/2020	108				14.1	0.98		pCi/g
789UMR-TP04-0006-01	160-39120-11	Radium-226	10/8/2020	20.7	G			2.54	1.21		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0006-01	160-39120-11	Radium-228	10/8/2020	89.3				9.65	1.76		pCi/g
789UMR-TP04-0006-01	160-39120-11	Thallium-208	10/8/2020	34.7				3.84	0.77		pCi/g
789UMR-TP04-0006-01	160-39120-11	Thorium-234	10/8/2020	11.1	U		U	4.14	23		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0612-01	160-39120-12	Thorium	9/21/2020	91					4.7	3.1	mg/Kg
789UMR-TP04-0612-01	160-39120-12	U-233	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-0612-01	160-39120-12	U-234	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-0612-01	160-39120-12	U-235	9/22/2020	0.093					0.05	0.028	mg/Kg
789UMR-TP04-0612-01	160-39120-12	U-236	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-0612-01	160-39120-12	U-238	9/22/2020	11	B				0.05	0.028	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0612-01	160-39120-12	Thorium-228	10/16/2020	42.6		J	J	5.03	0.61		pCi/g
789UMR-TP04-0612-01	160-39120-12	Thorium-230	10/16/2020	9.89		J	J	1.9	0.48		pCi/g
789UMR-TP04-0612-01	160-39120-12	Thorium-232	10/16/2020	47.7		J	J	5.47	0.48		pCi/g
789UMR-TP04-0612-01	160-39120-12	Uranium-233/234	9/24/2020	7.34				0.802	0.08		pCi/g
789UMR-TP04-0612-01	160-39120-12	Uranium-235/236	9/24/2020	0.463				0.149	0.05		pCi/g
789UMR-TP04-0612-01	160-39120-12	Uranium-238	9/24/2020	7.11				0.781	0.07		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0612-01	160-39120-12	Actinium 228	10/8/2020	48.1				5.22	1.31		pCi/g
789UMR-TP04-0612-01	160-39120-12	Bismuth-212	10/8/2020	49.5		J	J	7.08	5.14		pCi/g
789UMR-TP04-0612-01	160-39120-12	Bismuth-214	10/8/2020	11.8				1.48	0.77		pCi/g
789UMR-TP04-0612-01	160-39120-12	Cesium-137	10/8/2020	0.177	U		U	0.427	0.71		pCi/g
789UMR-TP04-0612-01	160-39120-12	Lead-212	10/8/2020	57.2				6.1	0.68		pCi/g
789UMR-TP04-0612-01	160-39120-12	Lead-214	10/8/2020	13.3				1.66	0.97		pCi/g
789UMR-TP04-0612-01	160-39120-12	Potassium-40	10/8/2020	25.5				4.65	2.34		pCi/g
789UMR-TP04-0612-01	160-39120-12	Protactinium-234	10/8/2020	-0.187	U		U	0.792	4.2		pCi/g
789UMR-TP04-0612-01	160-39120-12	Radium-224	10/8/2020	57.2				6.1	0.68		pCi/g
789UMR-TP04-0612-01	160-39120-12	Radium-226	10/8/2020	11.8				1.48	0.77		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-0612-01	160-39120-12	Radium-228	10/8/2020	48.1				5.22	1.31		pCi/g
789UMR-TP04-0612-01	160-39120-12	Thallium-208	10/8/2020	18.9				2.1	0.48		pCi/g
789UMR-TP04-0612-01	160-39120-12	Thorium-234	10/8/2020	7.15	U		U	3.19	24.4		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1218-01	160-39120-13	Thorium	9/21/2020	130					4.7	3.1	mg/Kg
789UMR-TP04-1218-01	160-39120-13	U-233	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-1218-01	160-39120-13	U-234	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-1218-01	160-39120-13	U-235	9/22/2020	0.23					0.05	0.028	mg/Kg
789UMR-TP04-1218-01	160-39120-13	U-236	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP04-1218-01	160-39120-13	U-238	9/22/2020	30	B				0.05	0.028	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1218-01	160-39120-13	Thorium-228	10/20/2020	132	G			15	1.92		pCi/g
789UMR-TP04-1218-01	160-39120-13	Thorium-230	10/20/2020	29.5	G			5.41	1.2		pCi/g
789UMR-TP04-1218-01	160-39120-13	Thorium-232	10/20/2020	133	G			15.1	1.29		pCi/g
789UMR-TP04-1218-01	160-39120-13	Uranium-233/234	9/24/2020	19.9				1.96	0.11		pCi/g
789UMR-TP04-1218-01	160-39120-13	Uranium-235/236	9/24/2020	1.12				0.288	0.1		pCi/g
789UMR-TP04-1218-01	160-39120-13	Uranium-238	9/24/2020	20.6				2.02	0.09		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1218-01	160-39120-13	Actinium 228	10/8/2020	159				16.7	2.13		pCi/g
789UMR-TP04-1218-01	160-39120-13	Bismuth-212	10/8/2020	169		J	J	19.4	8.86		pCi/g
789UMR-TP04-1218-01	160-39120-13	Bismuth-214	10/8/2020	37.1				4.29	1.64		pCi/g
789UMR-TP04-1218-01	160-39120-13	Cesium-137	10/8/2020	-0.506	U		U	0.812	1.34		pCi/g
789UMR-TP04-1218-01	160-39120-13	Lead-212	10/8/2020	179				18.7	1.1		pCi/g
789UMR-TP04-1218-01	160-39120-13	Lead-214	10/8/2020	38.1				4.29	1.61		pCi/g
789UMR-TP04-1218-01	160-39120-13	Potassium-40	10/8/2020	9.36				7.01	7.14		pCi/g
789UMR-TP04-1218-01	160-39120-13	Protactinium-234	10/8/2020	1.83	U		U	1.28	2.32		pCi/g
789UMR-TP04-1218-01	160-39120-13	Radium-224	10/8/2020	179				18.7	1.1		pCi/g
789UMR-TP04-1218-01	160-39120-13	Radium-226	10/8/2020	37.1	G			4.29	1.64		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1218-01	160-39120-13	Radium-228	10/8/2020	159				16.7	2.13		pCi/g
789UMR-TP04-1218-01	160-39120-13	Thallium-208	10/8/2020	58.1				6.11	0.96		pCi/g
789UMR-TP04-1218-01	160-39120-13	Thorium-234	10/8/2020	18	U		U	4.57	33.6		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1824-01	160-39120-14	Thorium	9/21/2020	79					4.8	3.2	mg/Kg
789UMR-TP04-1824-01	160-39120-14	U-233	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP04-1824-01	160-39120-14	U-234	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP04-1824-01	160-39120-14	U-235	9/22/2020	0.9					0.05	0.029	mg/Kg
789UMR-TP04-1824-01	160-39120-14	U-236	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP04-1824-01	160-39120-14	U-238	9/22/2020	120	B				0.05	0.029	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1824-01	160-39120-14	Thorium-228	10/16/2020	440	G			44.8	3.8		pCi/g
789UMR-TP04-1824-01	160-39120-14	Thorium-230	10/16/2020	83.1	G			13	2.69		pCi/g
789UMR-TP04-1824-01	160-39120-14	Thorium-232	10/16/2020	438	G			44.5	2.39		pCi/g
789UMR-TP04-1824-01	160-39120-14	Uranium-233/234	9/29/2020	62.5		J	J	5.48	0.03		pCi/g
789UMR-TP04-1824-01	160-39120-14	Uranium-235/236	9/29/2020	3.74		J	J	0.536	0.07		pCi/g
789UMR-TP04-1824-01	160-39120-14	Uranium-238	9/29/2020	61.2		J	J	5.38	0.06		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1824-01	160-39120-14	Actinium 228	10/8/2020	499				51.1	2.64		pCi/g
789UMR-TP04-1824-01	160-39120-14	Bismuth-212	10/8/2020	513		J	J	54.7	11.9		pCi/g
789UMR-TP04-1824-01	160-39120-14	Bismuth-214	10/8/2020	102				10.8	1.82		pCi/g
789UMR-TP04-1824-01	160-39120-14	Cesium-137	10/8/2020	-0.709	U		U	1.03	1.69		pCi/g
789UMR-TP04-1824-01	160-39120-14	Lead-212	10/8/2020	557				72.2	1.66		pCi/g
789UMR-TP04-1824-01	160-39120-14	Lead-214	10/8/2020	112				11.8	2.38		pCi/g
789UMR-TP04-1824-01	160-39120-14	Potassium-40	10/8/2020	17.3				9.79	9.26		pCi/g
789UMR-TP04-1824-01	160-39120-14	Protactinium-234	10/8/2020	4				2.29	3.69		pCi/g
789UMR-TP04-1824-01	160-39120-14	Radium-224	10/8/2020	557				72.2	1.66		pCi/g
789UMR-TP04-1824-01	160-39120-14	Radium-226	10/8/2020	102	G			10.8	1.82		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-1824-01	160-39120-14	Radium-228	10/8/2020	499				51.1	2.64		pCi/g
789UMR-TP04-1824-01	160-39120-14	Thallium-208	10/8/2020	176				18.4	1.23		pCi/g
789UMR-TP04-1824-01	160-39120-14	Thorium-234	10/8/2020	37.6	U		U	7.02	53.1		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-2430-01	160-39120-15	Thorium	9/21/2020	29					4.4	3	mg/Kg
789UMR-TP04-2430-01	160-39120-15	U-233	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-2430-01	160-39120-15	U-234	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-2430-01	160-39120-15	U-235	9/22/2020	0.31					0.05	0.027	mg/Kg
789UMR-TP04-2430-01	160-39120-15	U-236	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-2430-01	160-39120-15	U-238	9/22/2020	41	B				0.05	0.027	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-2430-01	160-39120-15	Thorium-228	10/16/2020	253	G			25.9	2.57		pCi/g
789UMR-TP04-2430-01	160-39120-15	Thorium-230	10/16/2020	46.5	G			7.44	1.32		pCi/g
789UMR-TP04-2430-01	160-39120-15	Thorium-232	10/16/2020	245	G			25.1	1.42		pCi/g
789UMR-TP04-2430-01	160-39120-15	Uranium-233/234	9/29/2020	33.1				2.94	0.05		pCi/g
789UMR-TP04-2430-01	160-39120-15	Uranium-235/236	9/29/2020	2.17				0.331	0.02		pCi/g
789UMR-TP04-2430-01	160-39120-15	Uranium-238	9/29/2020	33.1				2.94	0.05		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-2430-01	160-39120-15	Actinium 228	10/8/2020	285				29.4	2.8		pCi/g
789UMR-TP04-2430-01	160-39120-15	Bismuth-212	10/8/2020	292		J	J	32.5	11.9		pCi/g
789UMR-TP04-2430-01	160-39120-15	Bismuth-214	10/8/2020	65.4				7.06	1.64		pCi/g
789UMR-TP04-2430-01	160-39120-15	Cesium-137	10/8/2020	-0.623	U		U	1.04	1.58		pCi/g
789UMR-TP04-2430-01	160-39120-15	Lead-212	10/8/2020	314				40.8	1.44		pCi/g
789UMR-TP04-2430-01	160-39120-15	Lead-214	10/8/2020	66.3				7.2	1.84		pCi/g
789UMR-TP04-2430-01	160-39120-15	Potassium-40	10/8/2020	4.5	U		U	7.3	12.1		pCi/g
789UMR-TP04-2430-01	160-39120-15	Protactinium-234	10/8/2020	3.77	U		U	2.17	8.23		pCi/g
789UMR-TP04-2430-01	160-39120-15	Radium-224	10/8/2020	314				40.8	1.44		pCi/g
789UMR-TP04-2430-01	160-39120-15	Radium-226	10/8/2020	65.4	G			7.06	1.64		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-2430-01	160-39120-15	Radium-228	10/8/2020	285				29.4	2.8		pCi/g
789UMR-TP04-2430-01	160-39120-15	Thallium-208	10/8/2020	102				10.8	1.12		pCi/g
789UMR-TP04-2430-01	160-39120-15	Thorium-234	10/8/2020	53.4				10.2	13.2		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-3648-01	160-39120-16	Thorium	9/21/2020	45					4.5	3	mg/Kg
789UMR-TP04-3648-01	160-39120-16	U-233	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-3648-01	160-39120-16	U-234	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-3648-01	160-39120-16	U-235	9/22/2020	0.41					0.05	0.027	mg/Kg
789UMR-TP04-3648-01	160-39120-16	U-236	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP04-3648-01	160-39120-16	U-238	9/22/2020	53	B				0.05	0.027	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-3648-01	160-39120-16	Thorium-228	10/16/2020	468	G			47.6	3.98		pCi/g
789UMR-TP04-3648-01	160-39120-16	Thorium-230	10/16/2020	78.4	G			12.8	1.15		pCi/g
789UMR-TP04-3648-01	160-39120-16	Thorium-232	10/16/2020	488	G			49.2	1.85		pCi/g
789UMR-TP04-3648-01	160-39120-16	Uranium-233/234	9/29/2020	41.5				3.67	0.04		pCi/g
789UMR-TP04-3648-01	160-39120-16	Uranium-235/236	9/29/2020	3.78				0.499	0.06		pCi/g
789UMR-TP04-3648-01	160-39120-16	Uranium-238	9/29/2020	39.1				3.47	0.04		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-3648-01	160-39120-16	Actinium 228	10/8/2020	342				34.9	3.25		pCi/g
789UMR-TP04-3648-01	160-39120-16	Bismuth-212	10/8/2020	366		J	J	42.3	15.2		pCi/g
789UMR-TP04-3648-01	160-39120-16	Bismuth-214	10/8/2020	75.1				8.13	2.15		pCi/g
789UMR-TP04-3648-01	160-39120-16	Cesium-137	10/8/2020	-0.269	U		U	1.18	1.95		pCi/g
789UMR-TP04-3648-01	160-39120-16	Lead-212	10/8/2020	381				39.9	1.67		pCi/g
789UMR-TP04-3648-01	160-39120-16	Lead-214	10/8/2020	77.6				8.35	2.42		pCi/g
789UMR-TP04-3648-01	160-39120-16	Potassium-40	10/8/2020	53				11	7.18		pCi/g
789UMR-TP04-3648-01	160-39120-16	Protactinium-234	10/8/2020	-0.361	U		U	0.872	9.81		pCi/g
789UMR-TP04-3648-01	160-39120-16	Radium-224	10/8/2020	381				39.9	1.67		pCi/g
789UMR-TP04-3648-01	160-39120-16	Radium-226	10/8/2020	75.1	G			8.13	2.15		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP04-3648-01	160-39120-16	Radium-228	10/8/2020	342				34.9	3.25		pCi/g
789UMR-TP04-3648-01	160-39120-16	Thallium-208	10/8/2020	127				13.1	1.34		pCi/g
789UMR-TP04-3648-01	160-39120-16	Thorium-234	10/8/2020	26.4	U		U	6.71	50.9		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0006-01	160-39120-2	Thorium	9/21/2020	53					4.4	3	mg/Kg
789UMR-TP02-0006-01	160-39120-2	U-233	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0006-01	160-39120-2	U-234	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0006-01	160-39120-2	U-235	9/22/2020	0.085					0.05	0.027	mg/Kg
789UMR-TP02-0006-01	160-39120-2	U-236	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0006-01	160-39120-2	U-238	9/22/2020	11	B				0.05	0.027	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0006-01	160-39120-2	Thorium-228	10/14/2020	20.9				1.98	0.13		pCi/g
789UMR-TP02-0006-01	160-39120-2	Thorium-230	10/14/2020	5.02		J	J	0.622	0.13		pCi/g
789UMR-TP02-0006-01	160-39120-2	Thorium-232	10/14/2020	18.8				1.8	0.06		pCi/g
789UMR-TP02-0006-01	160-39120-2	Uranium-233/234	9/24/2020	5.07				0.585	0.05		pCi/g
789UMR-TP02-0006-01	160-39120-2	Uranium-235/236	9/24/2020	0.412				0.133	0.04		pCi/g
789UMR-TP02-0006-01	160-39120-2	Uranium-238	9/24/2020	5.02				0.58	0.06		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0006-01	160-39120-2	Actinium 228	10/8/2020	30.4				3.38	1.08		pCi/g
789UMR-TP02-0006-01	160-39120-2	Bismuth-212	10/8/2020	38.1		J	J	6.7	4.25		pCi/g
789UMR-TP02-0006-01	160-39120-2	Bismuth-214	10/8/2020	10.5				1.43	0.66		pCi/g
789UMR-TP02-0006-01	160-39120-2	Cesium-137	10/8/2020	0.13	U		U	0.398	0.66		pCi/g
789UMR-TP02-0006-01	160-39120-2	Lead-212	10/8/2020	33.8				4.48	0.55		pCi/g
789UMR-TP02-0006-01	160-39120-2	Lead-214	10/8/2020	11.1				1.38	0.62		pCi/g
789UMR-TP02-0006-01	160-39120-2	Potassium-40	10/8/2020	15.3				3.61	2.3		pCi/g
789UMR-TP02-0006-01	160-39120-2	Protactinium-234	10/8/2020	0.352	U		U	0.542	2.46		pCi/g
789UMR-TP02-0006-01	160-39120-2	Radium-224	10/8/2020	33.8				4.48	0.55		pCi/g
789UMR-TP02-0006-01	160-39120-2	Radium-226	10/8/2020	10.5				1.43	0.66		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0006-01	160-39120-2	Radium-228	10/8/2020	30.4				3.38	1.08		pCi/g
789UMR-TP02-0006-01	160-39120-2	Thallium-208	10/8/2020	10.6				1.27	0.40		pCi/g
789UMR-TP02-0006-01	160-39120-2	Thorium-234	10/8/2020	9.1				3.29	5.07		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0612-01	160-39120-3	Thorium	9/21/2020	76					4.6	3.1	mg/Kg
789UMR-TP02-0612-01	160-39120-3	U-233	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0612-01	160-39120-3	U-234	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0612-01	160-39120-3	U-235	9/22/2020	0.19					0.05	0.027	mg/Kg
789UMR-TP02-0612-01	160-39120-3	U-236	9/22/2020	0.027					0.05	0.027	mg/Kg
789UMR-TP02-0612-01	160-39120-3	U-238	9/22/2020	24	B				0.05	0.027	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0612-01	160-39120-3	Thorium-228	10/16/2020	40.1				4.15	0.33		pCi/g
789UMR-TP02-0612-01	160-39120-3	Thorium-230	10/16/2020	13.8				1.83	0.25		pCi/g
789UMR-TP02-0612-01	160-39120-3	Thorium-232	10/16/2020	38.4				4	0.24		pCi/g
789UMR-TP02-0612-01	160-39120-3	Uranium-233/234	9/24/2020	12.5				1.29	0.07		pCi/g
789UMR-TP02-0612-01	160-39120-3	Uranium-235/236	9/24/2020	0.684				0.204	0.07		pCi/g
789UMR-TP02-0612-01	160-39120-3	Uranium-238	9/24/2020	11.6				1.21	0.09		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0612-01	160-39120-3	Actinium 228	10/8/2020	53.6				5.62	0.83		pCi/g
789UMR-TP02-0612-01	160-39120-3	Bismuth-212	10/8/2020	58.1		J	J	6.98	3.51		pCi/g
789UMR-TP02-0612-01	160-39120-3	Bismuth-214	10/8/2020	22.5				2.48	0.53		pCi/g
789UMR-TP02-0612-01	160-39120-3	Cesium-137	10/8/2020	-0.211	U		U	0.311	0.51		pCi/g
789UMR-TP02-0612-01	160-39120-3	Lead-212	10/8/2020	57.5				7.48	0.54		pCi/g
789UMR-TP02-0612-01	160-39120-3	Lead-214	10/8/2020	24.2				2.61	0.72		pCi/g
789UMR-TP02-0612-01	160-39120-3	Potassium-40	10/8/2020	12.2				3.32	2.46		pCi/g
789UMR-TP02-0612-01	160-39120-3	Protactinium-234	10/8/2020	0.365	U		U	0.377	2.95		pCi/g
789UMR-TP02-0612-01	160-39120-3	Radium-224	10/8/2020	57.5				7.48	0.54		pCi/g
789UMR-TP02-0612-01	160-39120-3	Radium-226	10/8/2020	22.5				2.48	0.53		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-0612-01	160-39120-3	Radium-228	10/8/2020	53.6				5.62	0.83		pCi/g
789UMR-TP02-0612-01	160-39120-3	Thallium-208	10/8/2020	18				1.95	0.35		pCi/g
789UMR-TP02-0612-01	160-39120-3	Thorium-234	10/8/2020	7.46	U		U	2.1	15.5		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1218-01	160-39120-4	Thorium	9/21/2020	73					4.4	3	mg/Kg
789UMR-TP02-1218-01	160-39120-4	U-233	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-1218-01	160-39120-4	U-234	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-1218-01	160-39120-4	U-235	9/22/2020	0.23					0.05	0.026	mg/Kg
789UMR-TP02-1218-01	160-39120-4	U-236	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-1218-01	160-39120-4	U-238	9/22/2020	30	B				0.05	0.026	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1218-01	160-39120-4	Thorium-228	10/16/2020	57.9				5.74	0.39		pCi/g
789UMR-TP02-1218-01	160-39120-4	Thorium-230	10/16/2020	15.9		J	J	2.08	0.24		pCi/g
789UMR-TP02-1218-01	160-39120-4	Thorium-232	10/16/2020	56				5.56	0.26		pCi/g
789UMR-TP02-1218-01	160-39120-4	Uranium-233/234	9/24/2020	13.6				1.37	0.05		pCi/g
789UMR-TP02-1218-01	160-39120-4	Uranium-235/236	9/24/2020	0.692				0.201	0.08		pCi/g
789UMR-TP02-1218-01	160-39120-4	Uranium-238	9/24/2020	13.5				1.36	0.06		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1218-01	160-39120-4	Actinium 228	10/8/2020	74.3				7.69	1.11		pCi/g
789UMR-TP02-1218-01	160-39120-4	Bismuth-212	10/8/2020	82		J	J	11.3	6.01		pCi/g
789UMR-TP02-1218-01	160-39120-4	Bismuth-214	10/8/2020	26.9				2.99	0.85		pCi/g
789UMR-TP02-1218-01	160-39120-4	Cesium-137	10/8/2020	-0.287	U		U	0.439	0.72		pCi/g
789UMR-TP02-1218-01	160-39120-4	Lead-212	10/8/2020	79				8.33	0.76		pCi/g
789UMR-TP02-1218-01	160-39120-4	Lead-214	10/8/2020	28.5				3.04	0.80		pCi/g
789UMR-TP02-1218-01	160-39120-4	Potassium-40	10/8/2020	14.2				4.2	3.23		pCi/g
789UMR-TP02-1218-01	160-39120-4	Protactinium-234	10/8/2020	-0.802	U		U	2.79	4.6		pCi/g
789UMR-TP02-1218-01	160-39120-4	Radium-224	10/8/2020	79				8.33	0.76		pCi/g
789UMR-TP02-1218-01	160-39120-4	Radium-226	10/8/2020	26.9				2.99	0.85		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1218-01	160-39120-4	Radium-228	10/8/2020	74.3				7.69	1.11		pCi/g
789UMR-TP02-1218-01	160-39120-4	Thallium-208	10/8/2020	27				2.88	0.56		pCi/g
789UMR-TP02-1218-01	160-39120-4	Thorium-234	10/8/2020	7.99	U		U	2.86	20.7		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1824-01	160-39120-5	Thorium	9/21/2020	88					4.2	2.9	mg/Kg
789UMR-TP02-1824-01	160-39120-5	U-233	9/22/2020	0.025					0.05	0.025	mg/Kg
789UMR-TP02-1824-01	160-39120-5	U-234	9/22/2020	0.025					0.05	0.025	mg/Kg
789UMR-TP02-1824-01	160-39120-5	U-235	9/22/2020	0.13					0.05	0.025	mg/Kg
789UMR-TP02-1824-01	160-39120-5	U-236	9/22/2020	0.025					0.05	0.025	mg/Kg
789UMR-TP02-1824-01	160-39120-5	U-238	9/22/2020	17	B				0.05	0.025	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1824-01	160-39120-5	Thorium-228	10/14/2020	32.6				3.03	0.13		pCi/g
789UMR-TP02-1824-01	160-39120-5	Thorium-230	10/14/2020	8.61				0.988	0.16		pCi/g
789UMR-TP02-1824-01	160-39120-5	Thorium-232	10/14/2020	30.9				2.88	0.09		pCi/g
789UMR-TP02-1824-01	160-39120-5	Uranium-233/234	9/24/2020	6.3				0.701	0.07		pCi/g
789UMR-TP02-1824-01	160-39120-5	Uranium-235/236	9/24/2020	0.271				0.111	0.06		pCi/g
789UMR-TP02-1824-01	160-39120-5	Uranium-238	9/24/2020	6.34				0.705	0.06		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1824-01	160-39120-5	Actinium 228	10/8/2020	38.9				4.2	0.96		pCi/g
789UMR-TP02-1824-01	160-39120-5	Bismuth-212	10/8/2020	41.8		J	J	6.03	4.61		pCi/g
789UMR-TP02-1824-01	160-39120-5	Bismuth-214	10/8/2020	14.2				1.66	0.66		pCi/g
789UMR-TP02-1824-01	160-39120-5	Cesium-137	10/8/2020	1.78				0.461	0.41		pCi/g
789UMR-TP02-1824-01	160-39120-5	Lead-212	10/8/2020	41.6				4.43	0.56		pCi/g
789UMR-TP02-1824-01	160-39120-5	Lead-214	10/8/2020	16.2				1.9	0.74		pCi/g
789UMR-TP02-1824-01	160-39120-5	Potassium-40	10/8/2020	15.9				4.15	3.06		pCi/g
789UMR-TP02-1824-01	160-39120-5	Protactinium-234	10/8/2020	-0.561	U		U	1.84	3.05		pCi/g
789UMR-TP02-1824-01	160-39120-5	Radium-224	10/8/2020	41.6				4.43	0.56		pCi/g
789UMR-TP02-1824-01	160-39120-5	Radium-226	10/8/2020	14.2				1.66	0.66		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-1824-01	160-39120-5	Radium-228	10/8/2020	38.9				4.2	0.96		pCi/g
789UMR-TP02-1824-01	160-39120-5	Thallium-208	10/8/2020	14				1.59	0.46		pCi/g
789UMR-TP02-1824-01	160-39120-5	Thorium-234	10/8/2020	12				2.88	4.85		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-2430-01	160-39120-6	Thorium	9/21/2020	9.8					4.4	3	mg/Kg
789UMR-TP02-2430-01	160-39120-6	U-233	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-2430-01	160-39120-6	U-234	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-2430-01	160-39120-6	U-235	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-2430-01	160-39120-6	U-236	9/22/2020	0.026					0.05	0.026	mg/Kg
789UMR-TP02-2430-01	160-39120-6	U-238	9/22/2020	2.2	B				0.05	0.026	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-2430-01	160-39120-6	Thorium-228	10/14/2020	1.47				0.286	0.12		pCi/g
789UMR-TP02-2430-01	160-39120-6	Thorium-230	10/14/2020	0.915		J	J	0.231	0.14		pCi/g
789UMR-TP02-2430-01	160-39120-6	Thorium-232	10/14/2020	1.19				0.247	0.07		pCi/g
789UMR-TP02-2430-01	160-39120-6	Uranium-233/234	9/24/2020	0.629				0.153	0.06		pCi/g
789UMR-TP02-2430-01	160-39120-6	Uranium-235/236	9/24/2020	0.0766				0.0606	0.07		pCi/g
789UMR-TP02-2430-01	160-39120-6	Uranium-238	9/24/2020	0.672				0.158	0.05		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-2430-01	160-39120-6	Actinium 228	10/8/2020	1.52				0.302	0.14		pCi/g
789UMR-TP02-2430-01	160-39120-6	Bismuth-212	10/8/2020	0.813	U	UJ	UJ	1.48	2.49		pCi/g
789UMR-TP02-2430-01	160-39120-6	Bismuth-214	10/8/2020	1.12				0.345	0.26		pCi/g
789UMR-TP02-2430-01	160-39120-6	Cesium-137	10/8/2020	-0.0358	U		U	0.137	0.23		pCi/g
789UMR-TP02-2430-01	160-39120-6	Lead-212	10/8/2020	1.52				0.28	0.16		pCi/g
789UMR-TP02-2430-01	160-39120-6	Lead-214	10/8/2020	1.14				0.233	0.23		pCi/g
789UMR-TP02-2430-01	160-39120-6	Potassium-40	10/8/2020	14.6				2.99	1.85		pCi/g
789UMR-TP02-2430-01	160-39120-6	Protactinium-234	10/8/2020	0.137	U		U	0.394	0.66		pCi/g
789UMR-TP02-2430-01	160-39120-6	Radium-224	10/8/2020	1.52				0.28	0.16		pCi/g
789UMR-TP02-2430-01	160-39120-6	Radium-226	10/8/2020	1.12				0.345	0.26		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP02-2430-01	160-39120-6	Radium-228	10/8/2020	1.52				0.302	0.14		pCi/g
789UMR-TP02-2430-01	160-39120-6	Thallium-208	10/8/2020	0.537				0.136	0.09		pCi/g
789UMR-TP02-2430-01	160-39120-6	Thorium-234	10/8/2020	-0.0384	U		U	0.091	3.91		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0015-01	160-39120-7	Thorium	9/21/2020	33					4.7	3.2	mg/Kg
789UMR-TP03-0015-01	160-39120-7	U-233	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-0015-01	160-39120-7	U-234	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-0015-01	160-39120-7	U-235	9/22/2020	0.1					0.05	0.028	mg/Kg
789UMR-TP03-0015-01	160-39120-7	U-236	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-0015-01	160-39120-7	U-238	9/22/2020	13	B				0.05	0.028	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0015-01	160-39120-7	Thorium-228	10/16/2020	55.8				5.59	0.41		pCi/g
789UMR-TP03-0015-01	160-39120-7	Thorium-230	10/16/2020	11.7				1.71	0.23		pCi/g
789UMR-TP03-0015-01	160-39120-7	Thorium-232	10/16/2020	55.6				5.57	0.2		pCi/g
789UMR-TP03-0015-01	160-39120-7	Uranium-233/234	9/24/2020	9.59				1.02	0.08		pCi/g
789UMR-TP03-0015-01	160-39120-7	Uranium-235/236	9/24/2020	0.366				0.143	0.09		pCi/g
789UMR-TP03-0015-01	160-39120-7	Uranium-238	9/24/2020	10				1.06	0.07		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0015-01	160-39120-7	Actinium 228	10/8/2020	73				7.67	1.25		pCi/g
789UMR-TP03-0015-01	160-39120-7	Bismuth-212	10/8/2020	82		J	J	12	6.63		pCi/g
789UMR-TP03-0015-01	160-39120-7	Bismuth-214	10/8/2020	17.5				2.22	1		pCi/g
789UMR-TP03-0015-01	160-39120-7	Cesium-137	10/8/2020	-0.327	U		U	0.506	0.83		pCi/g
789UMR-TP03-0015-01	160-39120-7	Lead-212	10/8/2020	81.2				8.59	0.81		pCi/g
789UMR-TP03-0015-01	160-39120-7	Lead-214	10/8/2020	17.3				2.09	1.05		pCi/g
789UMR-TP03-0015-01	160-39120-7	Potassium-40	10/8/2020	27.7				5.43	3.07		pCi/g
789UMR-TP03-0015-01	160-39120-7	Protactinium-234	10/8/2020	0.231	U		U	0.398	4.75		pCi/g
789UMR-TP03-0015-01	160-39120-7	Radium-224	10/8/2020	81.2				8.59	0.81		pCi/g
789UMR-TP03-0015-01	160-39120-7	Radium-226	10/8/2020	17.5	G			2.22	1		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0015-01	160-39120-7	Radium-228	10/8/2020	73				7.67	1.25		pCi/g
789UMR-TP03-0015-01	160-39120-7	Thallium-208	10/8/2020	26.2				2.83	0.58		pCi/g
789UMR-TP03-0015-01	160-39120-7	Thorium-234	10/8/2020	9.43	U		U	3.66	27.7		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0026-01	160-39120-8	Thorium	9/21/2020	25					4.8	3.2	mg/Kg
789UMR-TP03-0026-01	160-39120-8	U-233	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP03-0026-01	160-39120-8	U-234	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP03-0026-01	160-39120-8	U-235	9/22/2020	0.17					0.05	0.029	mg/Kg
789UMR-TP03-0026-01	160-39120-8	U-236	9/22/2020	0.029					0.05	0.029	mg/Kg
789UMR-TP03-0026-01	160-39120-8	U-238	9/22/2020	23	B				0.05	0.029	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0026-01	160-39120-8	Thorium-228	10/16/2020	130				12.7	0.79		pCi/g
789UMR-TP03-0026-01	160-39120-8	Thorium-230	10/16/2020	20.7				3.14	0.46		pCi/g
789UMR-TP03-0026-01	160-39120-8	Thorium-232	10/16/2020	127				12.4	0.39		pCi/g
789UMR-TP03-0026-01	160-39120-8	Uranium-233/234	9/24/2020	17.1				1.72	0.10		pCi/g
789UMR-TP03-0026-01	160-39120-8	Uranium-235/236	9/24/2020	0.773				0.235	0.09		pCi/g
789UMR-TP03-0026-01	160-39120-8	Uranium-238	9/24/2020	18				1.79	0.11		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0026-01	160-39120-8	Actinium 228	10/8/2020	116				12.2	1.7		pCi/g
789UMR-TP03-0026-01	160-39120-8	Bismuth-212	10/8/2020	122		J	J	16.8	9.07		pCi/g
789UMR-TP03-0026-01	160-39120-8	Bismuth-214	10/8/2020	28.8				3.53	1.41		pCi/g
789UMR-TP03-0026-01	160-39120-8	Cesium-137	10/8/2020	1.61				0.648	0.71		pCi/g
789UMR-TP03-0026-01	160-39120-8	Lead-212	10/8/2020	133				17.3	1.01		pCi/g
789UMR-TP03-0026-01	160-39120-8	Lead-214	10/8/2020	28.1				3.21	1.25		pCi/g
789UMR-TP03-0026-01	160-39120-8	Potassium-40	10/8/2020	7.36	U		U	7.74	8.05		pCi/g
789UMR-TP03-0026-01	160-39120-8	Protactinium-234	10/8/2020	0.13	U		U	0.681	4.62		pCi/g
789UMR-TP03-0026-01	160-39120-8	Radium-224	10/8/2020	133				17.3	1.01		pCi/g
789UMR-TP03-0026-01	160-39120-8	Radium-226	10/8/2020	28.8	G			3.53	1.41		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-0026-01	160-39120-8	Radium-228	10/8/2020	116				12.2	1.7		pCi/g
789UMR-TP03-0026-01	160-39120-8	Thallium-208	10/8/2020	43.7				4.73	0.75		pCi/g
789UMR-TP03-0026-01	160-39120-8	Thorium-234	10/8/2020	11.5	U		U	3.99	22.5		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-01	160-39120-9	Thorium	9/21/2020	36					4.6	3.1	mg/Kg
789UMR-TP03-1526-01	160-39120-9	U-233	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-1526-01	160-39120-9	U-234	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-1526-01	160-39120-9	U-235	9/22/2020	0.44					0.05	0.028	mg/Kg
789UMR-TP03-1526-01	160-39120-9	U-236	9/22/2020	0.028					0.05	0.028	mg/Kg
789UMR-TP03-1526-01	160-39120-9	U-238	9/22/2020	55	B				0.05	0.028	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-01	160-39120-9	Thorium-228	10/16/2020	197	G			24.1	3.28		pCi/g
789UMR-TP03-1526-01	160-39120-9	Thorium-230	10/16/2020	37	G			8.2	2.57		pCi/g
789UMR-TP03-1526-01	160-39120-9	Thorium-232	10/16/2020	182	G			22.7	2.56		pCi/g
789UMR-TP03-1526-01	160-39120-9	Uranium-233/234	9/29/2020	53.1		J	J	4.69	0.07		pCi/g
789UMR-TP03-1526-01	160-39120-9	Uranium-235/236	9/29/2020	2.99		J	J	0.458	0.03		pCi/g
789UMR-TP03-1526-01	160-39120-9	Uranium-238	9/29/2020	54.3		J	J	4.79	0.06		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-01	160-39120-9	Actinium 228	10/8/2020	489				49.8	3.63		pCi/g
789UMR-TP03-1526-01	160-39120-9	Bismuth-212	10/8/2020	509		J	J	54.2	15.2		pCi/g
789UMR-TP03-1526-01	160-39120-9	Bismuth-214	10/8/2020	95.9				10	2.2		pCi/g
789UMR-TP03-1526-01	160-39120-9	Cesium-137	10/8/2020	-0.829	U		U	1.31	2.16		pCi/g
789UMR-TP03-1526-01	160-39120-9	Lead-212	10/8/2020	528				55.2	1.86		pCi/g
789UMR-TP03-1526-01	160-39120-9	Lead-214	10/8/2020	99				10.5	2.77		pCi/g
789UMR-TP03-1526-01	160-39120-9	Potassium-40	10/8/2020	7.29	U		U	11.6	12		pCi/g
789UMR-TP03-1526-01	160-39120-9	Protactinium-234	10/8/2020	1.74	U		U	1.71	9.91		pCi/g
789UMR-TP03-1526-01	160-39120-9	Radium-224	10/8/2020	528				55.2	1.86		pCi/g
789UMR-TP03-1526-01	160-39120-9	Radium-226	10/8/2020	95.9	G			10	2.2		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP03-1526-01	160-39120-9	Radium-228	10/8/2020	489				49.8	3.63		pCi/g
789UMR-TP03-1526-01	160-39120-9	Thallium-208	10/8/2020	172				17.6	1.56		pCi/g
789UMR-TP03-1526-01	160-39120-9	Thorium-234	10/8/2020	28.6	U		U	6.76	49.2		pCi/g

LABORATORY DATA CONSULTANTS, INC.
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

Weston Solutions, Inc.
1090 King Georges Post Road, Suite 201
Edison, NJ 08837
ATTN: Ms. Smita Sumbaly
S.Sumbaly@WestonSolutions.com

November 20, 2020

SUBJECT: 789 Upper Mountain Road Site, Data Validation

Dear Ms. Sumbaly,

Enclosed are the final validation reports for the fractions listed below. This SDG was received on November 5, 2020. Attachment 1 is a summary of the samples that were reviewed for each analysis.

LDC Project #49606:

SDG #	**Fraction**
460-39298-1	Isotopic Uranium & Thorium, Gamma Spectroscopy

The data validation was performed under Level IV guidelines. The analyses were validated using the following documents as applicable to each method:

- Site-Specific UFP Quality Assurance Project Plan for 738 Upper Mountain Road Site, Lewiston, Niagara County, New York, October 2019
- Multi Agency Radiological Laboratory Analytical Protocols, Manual, July 2004
- USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review; January 2017
- EPA SW 846, Third Edition, Test Methods for Evaluating Solid Waste, update 1, July 1992; update IIA, August 1993; update II, September 1994; update IIB, January 1995; update III, December 1996; update IIIA, April 1998; IIIB, November 2004; update IV, February 2007; update V, July 2014

Please feel free to contact us if you have any questions.

Sincerely,

Pei Geng

Pei Geng
Pgeng@lab-data.com
Project Manager/Senior Chemist

101 pages-ADV EDD print out

Attachment 1

Level IV EDD

LDC #49606 (Weston Solutions, Inc.- Edison, NJ / 789 Upper Mountain Road)

LDC	SDG#	DATE REC'D	(3) DATE DUE	Isotopic Uranium (6020A)		Thorium (6020A)		Gamma Emmitting (GA-01-R)		Isotopic U (A-01-R)		Isotopic Th (A-01-R)																							
Matrix:	Water/Soil			W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S
A	160-39298-1	11/05/20	12/01/20	0	42	0	42	0	42	0	42	0	42																						
Total	J/PG			0	42	0	42	0	42	0	42	0	42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	210

Shaded cells indicate Level IV validation (all other cells are Level III validation). These sample counts do not include MS/MSD, and DUPs

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LDC Report# 49606A4a

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 20, 2020

Parameters: Isotopic Uranium & Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39298-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20
789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
789UMR-TP11-1218-01MS	160-39298-33MS	Soil	08/25/20
789UMR-TP11-1218-01MSD	160-39298-33MSD	Soil	08/25/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium and Thorium by Environmental Protection Agency (EPA) SW 846 Method 6020A

All sample results were subjected to Level IV evaluation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. ICPMS Tune

The mass calibration was within 0.1 AMU and the percent relative standard deviation (%RSD) was less than or equal to 5%.

III. Instrument Calibration

Initial and continuing calibrations were performed as required by the method.

The initial calibration verification (ICV) and continuing calibration verification (CCV) standards were within QC limits with the following exceptions:

Date	Lab. Reference/ID	Analyte	%R (Limits)	Associated Samples	Flag	A or P
10/08/20	CCV (15:57)	Uranium-233	113 (90-110)	789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01 789UMR-TP11-0006-01 789UMR-TP11-0612-01	NA	-

IV. ICP Interference Check Sample Analysis

The frequency of interference check sample (ICS) analysis was met. All criteria were within QC limits.

V. Laboratory Blanks

Laboratory blanks were analyzed as required by the method. No contaminants were found in the laboratory blanks with the following exceptions:

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Uranium-238	0.00485 mg/Kg	789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1
ICB/CCB	Uranium-238	0.036 ug/L	789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01
ICB/CCB	Uranium-238	0.042 ug/L	789UMR-TP05-1824-02
PB (prep blank)	Uranium-238	0.00485 mg/Kg	789UMR-TP08-0612-01 789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP08-3032-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01 789UMR-TP11-0006-01 789UMR-TP11-0612-01
ICB/CCB	Uranium-238 Uranium-235	0.031 ug/L 0.03 ug/L	789UMR-TP08-0612-01 789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP08-3032-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01 789UMR-TP11-0006-01 789UMR-TP11-0612-01

Blank ID	Analyte	Maximum Concentration	Associated Samples
PB (prep blank)	Uranium-238 Thorium	0.0319 mg/Kg 0.69 mg/Kg	789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01
ICB/CCB	Uranium-238 Uranium-235	0.044 ug/L 0.04 ug/L	789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01

Data qualification by the laboratory blanks was based on the maximum contaminant concentration in the laboratory blanks in the analysis of each analyte. The sample concentrations were either not detected or were significantly greater (>5X blank contaminants) than the concentrations found in the associated laboratory blanks with the following exceptions:

Sample	Analyte	Reported Concentration	Modified Final Concentration
789UMR-TP08-0612-01	Uranium-235	0.026 mg/Kg	0.030U mg/Kg
789UMR-TP08-1218-01	Uranium-235	0.020 mg/Kg	0.030U mg/Kg
789UMR-TP08-1218-02	Uranium-235	0.020 mg/Kg	0.028U mg/Kg
789UMR-TP08-1824-01	Uranium-235	0.018 mg/Kg	0.029U mg/Kg
789UMR-TP09-0006-01	Uranium-235	0.016 mg/Kg	0.028U mg/Kg
789UMR-TP09-0612-01	Uranium-235	0.018 mg/Kg	0.029U mg/Kg
789UMR-TP09-1218-01	Uranium-235	0.021 mg/Kg	0.029U mg/Kg
789UMR-TP09-1824-01	Uranium-235	0.027 mg/Kg	0.032U mg/Kg
789UMR-TP10-0006-01	Uranium-235	0.023 mg/Kg	0.032U mg/Kg
789UMR-TP10-0612-01	Uranium-235	0.027 mg/Kg	0.032U mg/Kg

Sample	Analyte	Reported Concentration	Modified Final Concentration
789UMR-TP10-1218-01	Uranium-235	0.019 mg/Kg	0.030U mg/Kg
789UMR-TP10-1824-01	Uranium-235	0.020 mg/Kg	0.030U mg/Kg
789UMR-TP12-0406-01	Uranium-235	0.019 mg/Kg	0.029U mg/Kg

VI. Field Blanks

No field blanks were identified in this SDG.

VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
789UMR-TP05-1824-01MS/MSD (789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1)	Thorium	49 (50-150)	47 (50-150)	J (all detects)	A
789UMR-TP05-1824-01MS/MSD (789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1)	Uranium-235	211 (75-125)	221 (75-125)	J (all detects)	A

Spike ID (Associated Samples)	Analyte	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
789UMR-TP11-1218-01MS/MSD (789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01)	Uranium-235	132 (75-125)	-	J (all detects)	A

For 789UMR-TP05-1824-01MS/MSD, 789UMR-TP08-1218-01MS/MSD, and 789UMR-TP11-1218-01MS/MSD, no data were qualified for uranium-238 percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Analyte	RPD (Limits)	Flag	A or P
789UMR-TP11-1218-01MS/MSD (789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01)	Uranium-238	36 (≤20)	J (all detects)	A

VIII. Duplicate Sample Analysis

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

IX. Serial Dilution

Serial dilution analysis was performed on an associated project sample. Percent differences (%D) were within QC limits.

X. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

XI. Field Duplicates

Samples 789UMR-TP05-1824-01 and 789UMR-TP05-1824-02 and samples 789UMR-TP08-1218-01 and 789UMR-TP08-1218-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	789UMR-TP05-1824-01	789UMR-TP05-1824-02	
Thorium	41	45	9 (≤30)
Uranium-235	0.60	0.69	14 (≤30)
Uranium-238	79	92	15 (≤30)

Analyte	Concentration (mg/Kg)		RPD (Limits)
	789UMR-TP08-1218-01	789UMR-TP08-1218-02	
Thorium	6.8	5.6	19 (≤30)
Uranium-235	0.020	0.020	0 (≤30)
Uranium-238	2.6	2.8	7 (≤30)

XII. Internal Standards (ICP-MS)

All internal standard percent recoveries (%R) were within QC limits.

XIII. Sample Result Verification

All sample result verifications were acceptable.

XIV. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results rejected in this SDG.

Due to MS/MSD %R and RPD, data were qualified as estimated in twenty-seven samples.

Due to laboratory blank contamination, data were qualified as not detected in thirteen samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Data Qualification Summary - SDG 160-39298-1

Sample	Analyte	Flag	A or P	Reason
789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1	Thorium Uranium-235	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01	Uranium-235	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP12-0406-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01	Uranium-238	J (all detects)	A	Matrix spike/Matrix spike duplicate (RPD)

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Laboratory Blank Data Qualification Summary - SDG 160-39298-1

Sample	Analyte	Modified Final Concentration	A or P
789UMR-TP08-0612-01	Uranium-235	0.030U mg/Kg	A
789UMR-TP08-1218-01	Uranium-235	0.030U mg/Kg	A
789UMR-TP08-1218-02	Uranium-235	0.028U mg/Kg	A

Sample	Analyte	Modified Final Concentration	A or P
789UMR-TP08-1824-01	Uranium-235	0.029U mg/Kg	A
789UMR-TP09-0006-01	Uranium-235	0.028U mg/Kg	A
789UMR-TP09-0612-01	Uranium-235	0.029U mg/Kg	A
789UMR-TP09-1218-01	Uranium-235	0.029U mg/Kg	A
789UMR-TP09-1824-01	Uranium-235	0.032U mg/Kg	A
789UMR-TP10-0006-01	Uranium-235	0.032U mg/Kg	A
789UMR-TP10-0612-01	Uranium-235	0.032U mg/Kg	A
789UMR-TP10-1218-01	Uranium-235	0.030U mg/Kg	A
789UMR-TP10-1824-01	Uranium-235	0.030U mg/Kg	A
789UMR-TP12-0406-01	Uranium-235	0.029U mg/Kg	A

789 Upper Mountain Road Site
Isotopic Uranium & Thorium - Field Blank Data Qualification Summary - SDG 160-39298-1

No Sample Data Qualified in this SDG

LDC #: 49606A4a
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/12/20
Page: 1 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: Metals (EPA SW 846 Method 6020A)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A A	
II.	ICP/MS Tune	A	
III.	Instrument Calibration	SW	
IV.	ICP Interference Check Sample (ICS) Analysis	A	
V.	Laboratory Blanks	SW	
VI.	Field Blanks	N	
VII.	Matrix Spike/Matrix Spike Duplicates	SW	
VIII.	Duplicate sample analysis	N	
IX.	Serial Dilution	A	
X.	Laboratory control samples	A	LCS
XI.	Field Duplicates	SW	(4,5) (19,20)
XII.	Internal Standard (ICP-MS)	A	
XIII.	Sample Result Verification	A	
XIV.	Overall Assessment of Data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
2	789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
3	789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
4	789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
5	789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
6	789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
7	789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
8	789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
9	789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
10	789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
11	789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
12	789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
13	789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
14	789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
15	789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20

LDC #: 49606A4a
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/12/20

Reviewer:
2nd Reviewer:

METHOD: Metals (EPA SW 846 Method 6020A)

16	789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20
17	789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
18	789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
19	789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
20	789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
21	789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
22	789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
23	789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
24	789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
25	789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
26	789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20
27	789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
28	789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
29	789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
30	789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
31	789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
32	789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
33	789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
34	789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
35	789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
36	789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
37	789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
38	789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
39	789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
40	789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
41	789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
42	789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
43	789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
44	789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
45	789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
46	789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
47	789UMR-TP11-1218-01MS	160-39298-33MS	Soil	08/25/20
48	789UMR-TP11-1218-01MSD	160-39298-33MSD	Soil	08/25/20
49				
50				

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times met?	X			
Were all water samples preserved to a pH of <2.			X	
II. ICP-MS Tune				
Were mass resolutions within 0.1 amu for all isotopes in the tuning solution?	X			
Were %RSDs of isoptoes in the tuning solution ≤5%?	X			
III. Calibration				
Were all instuments calibrated daily?	X			
Were the proper standards used?	X			
Were all initial and continuing calibration verifications within the 90-110% (80-120% for mercury) QC limits?		X		
Were the low level standard checks within 70-130%?	X			
Were all initial calibration correlation coefficients within limits as specifed by the method?	X			
IV. Blanks				
Was a method blank associated with every sample in this SDG?	X			
Was there contamination in the method blanks?	X			
Was there contamination in the initial and continuing calibration blanks?	X			
V. Interference Check Sample				
Were the interference check samples performed daily?	X			
Were the AB solution recoveries within 80-120%?	X			
VI. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?		X		
VII. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)				
Validation Area	**Yes**	**No**	**NA**	**Comments**
VIII. Internal Standards				
Were all percent recoveries within the 30-120% (60-125% for EPA Method 200.8) QC limits?	X			
If the recoveries were outside the limits, was a reanalysis performed?			X	
IX. Serial Dilution				
Were all percent differences <10%?	X			
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.		X		
X. Sample Result Verification				
Were all reporting limits adjusted to reflect sample dilutions?	X			
Were all soil samples dry weight corrected?	X			
XI. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
XII. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
XIII. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Sample Specific Element Reference

Reviewer:CR

All elements are applicable to each sample as noted below.

Sample ID	Target Analyte List
All	Th, U-233, U-234, U-235, U-236, U-238
QC: 43-48	Th, U-234, U-235, U-238

Analysis Method

ICP	
ICP-MS	Th, U-233, U-234, U-235, U-236, U-238
CVAA	

VALIDATION FINDINGS WORKSHEETS

Calibration

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

All initial calibration verifications (ICVs) and continuing calibration verifications (CCVs) were performed at the required frequency and were within the acceptance limits with the following exceptions:

Date	Time	Calibration ID	Analyte	%R	%R Limits	Associated Samples	Qualification	Det/ND
10/8/2020	15:57	CCV	U-233	113	90-110	28 to 32	Jdet/P	ND

Comments:

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Soil preparation factor applied (if applicable):

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:1-17

				Sample Identification											
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (units)**	**Action Level**	No quals											
U-238	0.00485														

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:1-4

				Sample Identification											
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (ug/L)**	**Action Level**	No quals											
U-238		0.036													

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:5

				Sample Identification											
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (ug/L)**	**Action Level**	No quals											
U-238		0.042													

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:18-32

				Sample Identification											
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (ug/L)**	**Action Level**	18	19	20	21	23	24	25	26	27	28	29	30
U-238	0.00485	0.031													
U-235		0.03		0.026 / 0.030	0.020 / 0.030	0.020 / 0.028	0.018 / 0.029	0.016 / 0.028	0.018 / 0.029	0.021 / 0.029	0.027 / 0.032	0.023 / 0.032	0.027 / 0.032	0.019 / 0.030	0.020 / 0.030

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

Sample Concentration, unless otherwise noted:mg/Kg Associated Samples:33-42

				Sample Identification											
Analyte	**PB (mg/Kg)**	**Maximum ICB/CCB (ug/L)**	**Action Level**	38											
U-238	0.0319	0.044	0.319												
Th	0.69		6.9												
U-235		0.04		0.019 / 0.029											

VALIDATION FINDINGS WORKSHEETS

Matrix Spike/Matrix Spike Duplicates

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

MS/MSD analysis was performed by the laboratory. All MS/MSD percent recoveries (%R) and relative percent differences (RPDs) were within the acceptable limits with the following exceptions:

MS/MSD ID	Matrix	Analyte	MS %R	MSD %R	%R Limit	RPD	RPD Limit	Associated Samples	Qualification	Det/ND
43, 44	s	Th	49	47	50-150			1 to 17	J/UJ/A	Det
		U-235	211	221	75-125			1 to 17	Jdet/A	Det
47, 48	s	U-235	132		75-125			33 to 42	Jdet/A	Det
		U-238				36	20	33 to 42	J/UJ/A	Det

Comments: U-234 spiked below the RL. 43/44, 45/46, 47/48: U-238 >4x

VALIDATION FINDINGS WORKSHEET

Field Duplicates

Reviewer:CR

Method: Metals

Analyte	Concentration (mg/Kg)		RPD (≤ 30)
	4	5	
Thorium	41	45	9
Uranium-235	0.60	0.69	14
Uranium-238	79	92	15

Analyte	Concentration (mg/Kg)		RPD (≤ 30)
	19	20	
Thorium	6.8	5.6	19
Uranium-235	0.020	0.020	0
Uranium-238	2.6	2.8	7

VALIDATION FINDINGS CHECKLIST

Calibration Calculation Verification

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

An intial calibration verification (ICV), continuing calibration verification (CCV), low level calibration check (LLCC), and interference check sample (ICSAB) percent recovery (%R) was recalculated for each type of analysis using the following formula:

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis

True = concentration of each analyte in the source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalcuated %R	Reported %R	Acceptable (Y/N)
ICV	ICP-MS	U-233	0.11	0.107	103	103	Y
CCV	ICP-MS	U-236	0.26	0.254	102	102	Y
LLCC	ICP-MS	Th	2.04	2	102	102	Y
ICSAB	ICP-MS	U-238	5.32	5.03	106	106	Y

ICP-MS Tune	QC Parameter	Mass	Actual	Required
9/30/2020	Mass Axis	205	205	± 0.1 amu
9/30/2020	%RSD	205	1.82	≤ 5%

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and post digestion spike (PDS) were recalculated using the following formula:

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentration of each analyte in the source

The sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentration

D = Duplicate sample concentration

The serial dilution percent difference (%D) was recalculated using the following formula.

%D = (Absolute value (I - SDR)) x 100 / (I)

I = Initial sample result

SDR = Serial dilution result (with a 5x dilution applied)

Sample ID	Type of Analysis	Element	Found/S/I	True/D/SDR	Recalcuated %R/RPD/%D	Reported %R/RPD/%D	Acceptable (Y/N)
LCS	LCS	Th	99.4	96.5	103	103	Y
43	MS	U-235	1	0.472	212	211	Y
43	Duplicate	U-238	82.1	87.6	6	6	Y
4	Serial dilution	U-238	79	78.6	0.5	0.03	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Trace Metals (EPA SW 846 Methods 6010/6020/7000)

Analytes were recalculated and verified using the following equation:

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids x Initial weight)

Sample ID	Analyte	Raw Data (ug/L)	Dilution	Initial Weight (g)	Final Volume (mL)	Percent solids (%)	Reported Result (mg/Kg)	Recalcuated Result (mg/Kg)	Acceptable (Y/N)
1	Th	18.735	10	0.5321	50	88	20	20	Y
2	U-235	0.41636	10	0.5663	50	94.4	0.39	0.39	Y
3	U-238	67.12453	10	0.5729	50	94.1	62	62	Y
4	Th	41.625	10	0.5258	50	97.7	41	41	Y
5	U-235	0.79916	10	0.5958	50	97.7	0.69	0.69	Y
6	U-238	75.58406	10	0.5333	50	97	73	73	Y
7	Th	32.597	10	0.5371	50	98.1	31	31	Y
8	U-235	0.52221	10	0.5193	50	95.1	0.53	0.53	Y
9	U-238	3.1135	10	0.524	50	85.6	3.5	3.5	Y
10	Th	10.204	10	0.5566	50	91.4	10	10	Y
11	U-235	0.0326	10	0.571	50	90.6	0.032	0.032	Y
12	U-238	4.67781	10	0.5093	50	87.7	5.2	5.2	Y
13	Th	15.29	10	0.54	50	91.8	15	15	Y
14	U-235	0.02985	10	0.5913	50	92.6	0.027	0.027	Y
15	U-238	2.49487	10	0.558	50	91.7	2.4	2.4	Y
16	Th	8.081	10	0.5513	50	92.3	7.9	7.9	Y
17	U-235	0.01991	10	0.5223	50	91.2	0.021	0.021	Y
18	U-238	3.15003	10	0.5374	50	92	3.2	3.2	Y
19	Th	6.758	10	0.5351	50	93	6.8	6.8	Y
20	U-235	0.02098	10	0.5706	50	92.9	0.02	0.02	Y
21	U-238	2.5032	10	0.5502	50	93.3	2.4	2.4	Y
22	Th	15.965	10	0.5953	50	92.6	14	14	Y
23	U-235	0.01717	10	0.597	50	89.5	0.016	0.016	Y
24	U-238	2.56295	10	0.5559	50	92.6	2.5	2.5	Y
25	Th	6.676	10	0.5541	50	92.8	6.5	6.5	Y

Sample Calculation Verification

Reviewer:CR

26	U-235	0.02613	10	0.5134	50	92.6	0.027	0.027	Y
27	U-238	2.53571	10	0.5113	50	90.5	2.7	2.7	Y
28	Th	6.1	10	0.5031	50	92.2	6.6	6.6	Y
29	U-235	0.01879	10	0.5401	50	93.3	0.019	0.019	Y
30	U-238	2.69094	10	0.5328	50	93.1	2.7	2.7	Y
31	Th	40.74	10	0.5681	50	91.6	39	39	Y
32	U-235	0.48316	10	0.5618	50	93.9	0.46	0.46	Y
33	U-238	46.98689	10	0.5478	50	94.2	46	46	Y
34	Th	22.846	10	0.5415	50	96.3	22	22	Y
35	U-235	0.24798	10	0.577	50	93.2	0.23	0.23	Y
36	U-238	75.91346	10	0.5944	50	96	67	67	Y
37	Th	21.466	10	0.5339	50	88.6	23	23	Y
38	U-235	0.01867	10	0.573	50	88.9	0.019	0.018	Y
39	U-238	16.0969	10	0.5543	50	92.5	16	16	Y
40	U-235	0.09838	10	0.5943	50	93.9	0.088	0.088	Y
41	Th	19.871	10	0.5123	50	96.2	20	20	Y
42	U-238	22.62325	10	0.5443	50	95.6	22	22	Y

LDC Report# 49606A35

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 20, 2020

Parameters: Gamma Spectroscopy

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39298-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20
789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
789UMR-TP05-0006-01DUP	160-39298-1DUP	Soil	08/26/20
789UMR-TP08-1218-01DUP	160-39298-19DUP	Soil	08/25/20
789UMR-TP12-0204-01DUP	160-39298-37DUP	Soil	08/26/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Gamma Spectroscopy by Method GA-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Thallium-208	0.04984 pCi/g	789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP08-3032-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01 789UMR-TP11-0006-01 789UMR-TP11-0612-01 789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks with the following exceptions:

Sample	Isotope	Reported Concentration	Modified Final Concentration
789UMR-TP09-0006-01	Thallium-208	0.490 pCi/g	0.490U pCi/g
789UMR-TP09-0612-01	Thallium-208	0.327 pCi/g	0.327U pCi/g
789UMR-TP09-1218-01	Thallium-208	0.254 pCi/g	0.254U pCi/g

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicates (MSD) analyses were not required by the method.

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits with the following exceptions:

DUP ID (Associated Samples)	Isotope	DER (Limits)	Flag	A or P
789UMR-TP05-0006-01DUP (789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1 789UMR-TP08-0612-01)	Thorium-234	3.06 (≤3)	UJ (all non-detects)	A

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP05-1824-01 and 789UMR-TP05-1824-02 and samples 789UMR-TP08-1218-01 and 789UMR-TP08-1218-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP05-1824-01	789UMR-TP05-1824-02	
Actinium-228	492	492	0
Bismuth-212	486	489	1
Bismuth-214	102	103	1
Lead-212	462	466	1
Lead-214	105	105	0
Radium-224	462	466	1
Radium-226	102	103	1
Radium-228	492	492	0
Thallium-208	165	166	1

Isotope	Activity (pCi/g)		RPD
	789UMR-TP08-1218-01	789UMR-TP08-1218-02	
Actinium-228	3.49	3.18	9
Bismuth-212	6.62	0.752U	Not calculable
Bismuth-214	1.20	1.25	4
Lead-212	3.78	2.91	26
Lead-214	1.35	1.19	13
Potassium-40	15.0	16.2	8
Radium-224	3.78	2.91	26
Radium-226	1.20	1.25	4

Isotope	Activity (pCi/g)		RPD
	789UMR-TP08-1218-01	789UMR-TP08-1218-02	
Radium-228	3.49	3.18	9
Thallium-208	1.21	1.07	12

X. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
789UMR-TP05-0612-01	Radium-226	1.16 pCi/g	1.00 pCi/g
789UMR-TP05-1218-01	Radium-226	1.03 pCi/g	1.00 pCi/g
789UMR-TP05-1824-01	Radium-226	1.25 pCi/g	1.00 pCi/g
789UMR-TP05-1824-02	Radium-226	1.70 pCi/g	1.00 pCi/g
789UMR-TP05-2430-01	Radium-226	1.70 pCi/g	1.00 pCi/g
789UMR-TP05-3036-01	Radium-226	1.51 pCi/g	1.00 pCi/g
789UMR-TP05-3654-01	Radium-226	1.08 pCi/g	1.00 pCi/g
789UMR-TP11-0006-01	Radium-226	1.25 pCi/g	1.00 pCi/g
789UMR-TP11-0612-01	Radium-226	1.14 pCi/g	1.00 pCi/g
789UMR-TP11-1218-01	Radium-226	1.50 pCi/g	1.00 pCi/g
789UMR-TP11-1824-01	Radium-226	1.12 pCi/g	1.00 pCi/g
789UMR-TP12-0002-01	Radium-226	1.84 pCi/g	1.00 pCi/g

The MDC was greater than the RL as listed above.

XI. Sample Result Verification

All sample result verifications were acceptable.

XII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to DUP DER, data were qualified as estimated in eighteen samples.

Due to laboratory blank contamination, data were qualified as not detected in three samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Gamma Spectroscopy - Data Qualification Summary - SDG 160-39298-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1 789UMR-TP08-0612-01	Thorium-234	UJ (all non-detects)	A	Duplicate sample analysis (DER)

789 Upper Mountain Road Site
Gamma Spectroscopy - Laboratory Blank Data Qualification Summary - SDG 160-39298-1

Sample	Isotope	Modified Final Activity	A or P
789UMR-TP09-0006-01	Thallium-208	0.490U pCi/g	A
789UMR-TP09-0612-01	Thallium-208	0.327U pCi/g	A
789UMR-TP09-1218-01	Thallium-208	0.254U pCi/g	A

789 Upper Mountain Road Site
Gamma Spectroscopy - Field Blank Data Qualification Summary - SDG 160-39298-1

No Sample Data Qualified in this SDG

LDC #: 49606A~~29a~~ 35
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/13/20
Page: 1 of 2
Reviewer: [illegible]
2nd Reviewer: [illegible]

METHOD: ~~Radium 226 & Other Gamma Emitters~~ (Method GA-01-R)
Gamma Spec,

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	N	not required
VII.	Duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(4,5) (19,20)
~~X.~~	~~Carrier recovery~~		
XI.	Minimum detectable activity (MDA)	SW	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
2	789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
3	789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
4	789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
5	789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
6	789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
7	789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
8	789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
9	789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
10	789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
11	789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
12	789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
13	789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
14	789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
15	789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
16	789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20

LDC #: 49606A29a
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/13/20
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: Radium 226 & Other Gamma Emitters (Method GA-01-R)

17	789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
18	789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
19	789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
20	789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
21	789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
22	789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
23	789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
24	789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
25	789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
26	789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20
27	789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
28	789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
29	789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
30	789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
31	789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
32	789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
33	789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
34	789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
35	789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
36	789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
37	789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
38	789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
39	789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
40	789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
41	789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
42	789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
43	789UMR-TP05-0006-01DUP	160-39298-1DUP	Soil	08/26/20
44	789UMR-TP08-1218-01DUP	160-39298-19DUP	Soil	08/25/20
45	789UMR-TP12-0204-01DUP	160-39298-37DUP	Soil	08/26/20
46				
47				
48				

Notes:

Reviewer:CR

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			DUP only
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?		X		
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?			X	
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted: pCi/g Associated Samples:19-36

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	23	24	25						
Tl-208	0.04984	0.4984	0.490	0.327	0.254						

VALIDATION FINDINGS WORKSHEETS

Laboratory Duplicates

Reviewer:CR

METHOD: Radiochemistry

Laboratory duplicate analysis was performed by the laboratory. All laboratory duplicates were with the relative percent difference (RPD) for samples >5X the reporting limits with the exceptions listed below. If samples were <5X the reproting limits, the relative error ration (RER) was used to evaluated with a limit of ≤1.

Duplicate ID	Matrix	Isotope	RPD	RPD Limit	DER	DER Limt	Assocaited Samples	Qualification	Det/ND
43	s	Th-234			3.06	≤3	1 to 18	J/UJ/A	ND

Comments:

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	4	5	
Actinium-228	492	492	0
Bismuth-212	486	489	1
Bismuth-214	102	103	1
Lead-212	462	466	1
Lead-214	105	105	0
Radium-224	462	466	1
Radium-226	102	103	1
Radium-228	492	492	0
Thallium-208	165	166	1

Isotope	Concentration (pCi/g)		RPD
	19	20	
Actinium-228	3.49	3.18	9
Bismuth-212	6.62	0.752U	NC
Bismuth-214	1.20	1.25	4
Lead-212	3.78	2.91	26
Lead-214	1.35	1.19	13
Potassium-40	15.0	16.2	8
Radium-224	3.78	2.91	26
Radium-226	1.20	1.25	4
Radium-228	3.49	3.18	9
Thallium-208	1.21	1.07	12

VALIDATION FINDINGS WORKSHEETS

Minimal Detectable Concentration

Reviewer:CR

METHOD: Radiochemsitry

All requested minimal detectable concentrations (MDC) were met with the following exceptions.

Sample ID	Isotope	QAPP RL (pCi/g)	Laboratory MDC (pCi/g)	Qualification
2	Ra-226	1.00	1.16	Text
3	Ra-226	1.00	1.03	Text
4	Ra-226	1.00	1.25	Text
5	Ra-226	1.00	1.70	Text
6	Ra-226	1.00	1.70	Text
7	Ra-226	1.00	1.51	Text
8	Ra-226	1.00	1.08	Text
31	Ra-226	1.00	1.25	Text
32	Ra-226	1.00	1.14	Text
33	Ra-226	1.00	1.50	Text
34	Ra-226	1.00	1.12	Text
36	Ra-226	1.00	1.84	Text

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Co-60	9.006	9.72	93	93	Y
45	Duplicate	K-40	22.7	24.96	9	9	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer: CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (Bq)	Initial Weight (g)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Ac-228	942	266.3	95.6	95.6	Y
2	Bi-212	4179	363.6	311	311	Y
3	Bi-214	472.4	298	42.8	42.8	Y
4	Pb-212	9368	547.6	462	462	Y
5	Pb-214	2042	528.1	105	105	Y
6	Ra-224	7391	494.6	404	404	Y
7	Ra-226	1581	540.3	71.4	79.1	Y
8	Ra-228	3572	437.9	220	220	Y
9	Tl-208	35.6	230.4	4.18	4.18	Y
10	Ac-228	415.4	289	38.8	38.9	Y
11	Bi-212	171.1	270.9	17.1	17.1	Y
12	Bi-214	88.12	236.7	10.1	10.1	Y
13	K-40	231.7	249.2	25.1	25.1	Y
14	Pb-212	165.3	270.6	16.5	16.5	Y
15	Pb-214	21.38	277.9	2.08	2.08	Y
16	Ra-224	84.13	274.6	8.28	8.28	Y
17	Ra-226	17.73	257.5	1.86	1.86	Y
18	Ra-228	65.54	292.4	6.06	6.06	Y
19	Tl-208	13.27	297	1.21	1.21	Y
20	Ac-228	33.74	289.8	3.18	3.15	Y
21	Bi-212	40.12	260	4.17	4.17	Y
22	Bi-214	129.7	291.8	12	12	Y
23	Pb-212	10.81	235	1.24	1.24	Y
24	Pb-214	7.406	252.8	0.792	0.792	Y
25	K-40	161.6	289.2	15.1	15.1	Y

Sample Calculation Verification

26	Ra-224	27.24	293.7	2.51	2.51	Y
27	Ra-226	7.959	234.9	0.916	0.916	Y
28	Ra-228	37.55	263.1	3.86	3.86	Y
29	Tl-208	8.042	282.7	0.769	0.769	Y
30	Ac-228	26.79	272.6	2.66	2.66	Y
31	Bi-212	3812	360	286	286	Y
32	Bi-214	1130	417.8	73.1	73.1	Y
33	Pb-212	4714	410	311	311	Y
34	Pb-214	1017	450.5	61	61.0	Y
35	Pb-214	738.9	404.1	49.4	49.4	Y
36	Ra-224	9501	512	502	502	Y
37	Ra-226	174.5	305	15.5	15.5	Y
38	Ra-228	49.53	271	4.94	4.94	Y
39	Tl-208	468.3	424.1	29.8	29.8	Y
40	Ac-228	825	366.3	60.9	60.9	Y
41	K-40	82	464.6	4.77	4.77	Y
42	Ra-226	344.2	509.4	18.3	18.3	Y

LDC Report# 49606A59

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 20, 2020

Parameters: Isotopic Uranium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39298-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20
789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
789UMR-TP12-0204-01DUP	160-39298-37DUP	Soil	08/26/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Uranium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Uranium-233/234 Uranium-235/236 Uranium-238	1.065 pCi/g 0.03912 pCi/g 0.2392 pCi/g	789UMR-TP12-0204-01 789UMR-TP13-0006-01 789UMR-TP13-0612-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks with the following exceptions:

Sample	Isotope	Reported Concentration	Modified Final Concentration
789UMR-TP12-0204-01	Uranium-235/236	0.870 pCi/g	1.00U pCi/g
789UMR-TP13-0006-01	Uranium-235/236	0.718 pCi/g	1.00U pCi/g
789UMR-TP13-0612-01	Uranium-235/236	0.646 pCi/g	1.00U pCi/g
789UMR-TP13-1218-01	Uranium-235/236	0.969 pCi/g	1.00U pCi/g
789UMR-TP13-1824-01	Uranium-235/236	0.909 pCi/g	1.00U pCi/g

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits.

For 789UMR-TP05-1824-01MS/MSD, no data were qualified for uranium-233/234 and uranium-238 percent recoveries (%R) outside the QC limits since the parent sample results were greater than 4X the spike concentration.

Duplicate error ratios (DER) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	DER (Limits)	Flag	A or P
789UMR-TP05-1824-01MS/MSD (789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1)	Uranium-233/234 Uranium-238	5.29 (≤3) 5.14 (≤3)	J (all detects) J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP05-1824-01 and 789UMR-TP05-1824-02 and samples 789UMR-TP08-1218-01 and 789UMR-TP08-1218-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP05-1824-01	789UMR-TP05-1824-02	
Uranium-233/234	60.3	54.9	9
Uranium-235/236	2.60	2.89	11
Uranium-238	60.6	54.3	11

Isotope	Activity (pCi/g)		RPD
	789UMR-TP08-1218-01	789UMR-TP08-1218-02	
Uranium-233/234	1.25	1.21	3
Uranium-235/236	0.0277	0.0837	101
Uranium-238	0.858	1.17	31

X. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
789UMR-TP05-1824-01	Uranium-232	24.5 (30-110)	All isotopes	J (all detects)	P
789UMR-TP05-3036-01	Uranium-232	28.8 (30-110)	All isotopes	J (all detects)	P
789UMR-TP06-1216-01	Uranium-232	114 (30-110)	All isotopes	J (all detects)	P
789UMR-TP11-0612-01	Uranium-232	29.3 (30-110)	All isotopes	J (all detects)	P
789UMR-TP12-0002-01	Uranium-232	23.7 (30-110)	All isotopes	J (all detects)	P

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL).

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD DER and tracer recovery %R, data were qualified as estimated in nineteen samples.

Due to laboratory blank contamination, data were qualified as not detected in five samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Uranium - Data Qualification Summary - SDG 160-39298-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1	Uranium-233/234 Uranium-238	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (DER)
789UMR-TP05-1824-01 789UMR-TP05-3036-01 789UMR-TP06-1216-01 789UMR-TP11-0612-01 789UMR-TP12-0002-01	All isotopes	J (all detects)	P	Tracer recoveries (%R)

789 Upper Mountain Road Site
Isotopic Uranium - Laboratory Blank Data Qualification Summary - SDG 160-39298-1

Sample	Isotope	Modified Final Activity	A or P
789UMR-TP12-0204-01	Uranium-235/236	1.00U pCi/g	A
789UMR-TP13-0006-01	Uranium-235/236	1.00U pCi/g	A
789UMR-TP13-0612-01	Uranium-235/236	1.00U pCi/g	A
789UMR-TP13-1218-01	Uranium-235/236	1.00U pCi/g	A
789UMR-TP13-1824-01	Uranium-235/236	1.00U pCi/g	A

789 Upper Mountain Road Site
Isotopic Uranium - Field Blank Data Qualification Summary - SDG 160-39298-1

No Sample Data Qualified in this SDG

LDC #: 49606A59
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/13/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Uranium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A/A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	SW	
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(4,5) (19,20)
X.	Tracer Recovery	SW	
XI.	Minimum detectable activity (MDA)	A	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
2	789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
3	789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
4	789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
5	789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
6	789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
7	789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
8	789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
9	789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
10	789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
11	789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
12	789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
13	789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
14	789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
15	789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
16	789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20

LDC #: 49606A59
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/13/20
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Uranium (Method A-01-R)

17	789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
18	789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
19	789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
20	789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
21	789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
22	789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
23	789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
24	789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
25	789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
26	789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20
27	789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
28	789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
29	789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
30	789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
31	789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
32	789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
33	789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
34	789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
35	789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
36	789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
37	789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
38	789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
39	789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
40	789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
41	789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
42	789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
43	789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
44	789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
45	789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
46	789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
47	789UMR-TP12-0204-01DUP	160-39298-37DUP	Soil	08/26/20
48				

Notes:

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?		X		
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?		X		
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?	X			
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted: pCi/g Associated Samples: 37, 39-42

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	37	39	40	41	42				
U-233/234	1.065	10.65									
U-235/236	0.03912		0.870 / 1.00	0.718 / 1.00	0.646 / 1.00	0.969 / 1.00	0.909 / 1.00				
U-238	0.2392										

VALIDATION FINDINGS WORKSHEETS

Matrix Spike/Matrix Spike Duplicates

Reviewer:CR

METHOD: Radiochemistry

MS/MSD analysis was performed by the laboratory. All MS/MSD percent recoveries (%R) and duplciate error rations (DERs) were within the acceptable limits with the following exceptions.

MS/MSD ID	Matrix	Isotope	MS %R	MSD %R	%R Limit	DER	DER Limit	Assocaited Samples	Qualification	Det/ND
43, 44	s	U-233/234				5.29	3	1 to 17	J/UJ/A	Det
		U-238				5.14	3	1 to 17	J/UJ/A	Det

Comments: 43/44: U-233/234, U-238 >4x

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	4	5	
U-233/234	60.3	54.9	9
U-235/236	2.60	2.89	11
U-238	60.6	54.3	11

Isotope	Concentration (pCi/g)		RPD
	19	20	
U-233/234	1.25	1.21	3
U-235/236	0.0277	0.0837	101
U-238	0.858	1.17	31

Chemical Recovery

METHOD: Radiochemistry

A LCS was analzyed for each matrix at the requried frequencies. All LCS percent recoveries (%R) were within the acceptable limits with the following exceptions.

Tracer	Matrix	Associated Isotope	Tracer %R	%R Limit	Assocaited Samples	Qualification	Det/ND
U-232	s	All isotopic U	24.5	30-110	4	J/UJ/P	Det
U-232	s	All isotopic U	28.8	30-110	7	J/UJ/P	Det
U-232	s	All isotopic U	114	30-110	11	J/UJ/P	Det
U-232	s	All isotopic U	29.3	30-110	32	J/UJ/P	Det
U-232	s	All isotopic U	23.7	30-110	36	J/UJ/P	Det

Comments:

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	U-233/234	5.662	6.37	89	89	Y
45	MS	U-238	7.381	6.55	113	113	Y
47	Duplicate	U-238	13.9	14.41	4	3	Y
36	Chemical recovery	U-232	1.32	5.51	24.0	23.7	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	U-233/234	1208.5	99.8	1	240	22.43	75.42	13.5	13.4	Y
2	U-235/236	66.75	80.2	1	240	27.56	33.49	1.69	1.69	Y
3	U-238	1752.5	100	1	240	27.93	41.07	28.8	28.7	Y
4	U-233/234	2090.25	99.8	1	240	26.55	24.51	60.3	60.4	Y
5	U-235/236	95.75	80.2	1.01	240	24.34	31.69	2.89	2.88	Y
6	U-238	2110.25	100	1	240	27.37	31.3	46.2	46.2	Y
7	U-233/234	1931.75	99.8	1	240	26.76	28.76	47.0	47.2	Y
8	U-235/236	73.75	80.2	1	240	28.89	35.91	1.66	1.66	Y
9	U-238	288	100	0.99	240	26.18	91.39	2.3	2.3	Y
10	U-233/234	311	99.8	1.01	240	26.31	80.85	2.73	2.72	Y
11	U-235/236	19.75	80.2	1	240	22.66	113.62	0.179	0.180	Y
12	U-238	857	100	1	240	26.34	75.9	8.01	8.05	Y
13	U-233/234	1101.5	99.8	1	240	25.68	74.2	10.9	10.9	Y
14	U-235/236	41.75	80.2	0.9948	240	24.22	93.81	0.432	0.432	Y
15	U-238	218	100	0.99	240	27.22	86.39	1.75	1.76	Y
16	U-233/234	215	99.8	1.01	240	27.07	81.57	1.82	1.81	Y
17	U-235/236	11	80.2	0.99	240	25.8	79.88	0.126	0.126	Y
18	U-238	189.5	100	1	240	25.17	96.43	1.47	1.47	Y
19	U-233/234	168.75	99.8	0.996	240	27.86	91.39	1.25	1.25	Y
20	U-235/236	8.75	80.2	1.0013	240	23.76	102.82	0.0837	0.0837	Y
21	U-238	127.5	100	0.9963	240	26.97	88.53	1.01	1.01	Y
22	U-233/234	761.5	99.8	0.9988	240	28.06	76.66	6.67	6.67	Y
23	U-233/234	105.5	99.8	1.0057	240	27.81	89.16	0.796	0.796	Y
24	U-238	127	100	1.0014	240	26.68	98.15	0.909	0.909	Y
25	U-233/234	128	99.8	1.0056	240	23.93	96.83	1.03	1.03	Y

Sample Calculation Verification

Reviewer:CR

26	U-235/236	4	80.2	1.0073	240	23.66	105.4	0.0373	0.0373	Y
27	U-238	140.25	100	0.9933	240	22.45	105.5	1.12	1.12	Y
28	U-233/234	172.25	99.8	0.9965	240	25.51	92.8	1.37	1.37	Y
29	U-235/236	8.75	80.2	0.9976	240	24.29	94.79	0.0891	0.0892	Y
30	U-238	122.75	100	1.0095	240	27.12	96.17	0.875	0.875	Y
31	U-233/234	2007.25	99.8	1.0061	240	26.67	31.18	45.1	45.1	Y
32	U-235/236	76	80.2	0.9924	240	27.15	29.29	2.25	2.25	Y
33	U-238	1825.75	100	1.0087	240	26.84	35.69	35.5	35.5	Y
34	U-233/234	1989.75	99.8	1.0045	240	25.14	80.41	18.4	18.4	Y
35	U-235/236	90.75	80.2	1.0092	240	26.48	44.86	1.77	1.77	Y
36	U-238	2207.75	100	0.9943	240	24.96	23.69	70.5	70.5	Y
37	U-233/234	1159.75	99.8	0.99	240	26.8	62.51	13.1	13.2	Y
38	U-238	76	100	1.0064	240	27.12	53.53	0.976	0.976	Y
39	U-238	1236	100	0.99	240	23.25	75.38	13.3	13.4	Y
40	U-233/234	1118.5	99.8	1.01	240	22.54	79.84	11.6	11.6	Y
41	U-235/236	56	80.2	0.99	240	22.42	60.73	0.969	0.972	Y
42	U-238	1424.75	100	1	240	27.56	51.83	18.6	18.7	Y

LDC Report# 49606A73

Laboratory Data Consultants, Inc.
Data Validation Report

Project/Site Name: 789 Upper Mountain Road Site

LDC Report Date: November 20, 2020

Parameters: Isotopic Thorium

Validation Level: Level IV

Laboratory: Eurofins

Sample Delivery Group (SDG): 160-39298-1

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20
789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20

Sample Identification	Laboratory Sample Identification	Matrix	Collection Date
789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
789UMR-TP08-3032-01DUP	160-39298-22DUP	Soil	08/25/20
789UMR-TP12-0406-01DUP	160-39298-38DUP	Soil	08/26/20

Introduction

This Data Validation Report (DVR) presents data validation findings and results for the associated samples listed on the cover page. Data validation was performed in accordance with the Site-Specific UFP Quality Assurance Project Plan for 789 Upper Mountain Road Site Road Site, Lewiston, Niagara County, New York (October 2019), the Multi Agency Radiological Laboratory Analytical Protocols (MARLAP) Manual (July 2004), and a modified outline of the USEPA National Functional Guidelines (NFG) for Inorganic Superfund Methods Data Review (January 2017). Where specific guidance was not available, the data has been evaluated in a conservative manner consistent with industry standards using professional experience.

The analyses were performed by the following method:

Isotopic Thorium by Method A-01-R

All sample results were subjected to Level IV data validation, which is comprised of the quality control (QC) summary forms as well as the raw data, to confirm sample quantitation and identification.

The following are definitions of the data qualifiers utilized during data validation:

J (Estimated): The compound or analyte was analyzed for and positively identified by the laboratory; however the reported concentration is estimated due to non-conformances discovered during data validation.

U (Non-detected): The compound or analyte was analyzed for and positively identified by the laboratory; however the compound or analyte should be considered non-detected at the reported concentration due to the presence of contaminants detected in the associated blank(s).

UJ (Non-detected estimated): The compound or analyte was reported as not detected by the laboratory; however the reported quantitation/detection limit is estimated due to non-conformances discovered during data validation.

R (Rejected): The sample results were rejected due to gross non-conformances discovered during data validation. Data qualified as rejected is not usable.

NA (Not Applicable): The non-conformance discovered during data validation demonstrates a high bias, while the affected compound or analyte in the associated sample(s) was reported as not detected by the laboratory and did not warrant the qualification of the data.

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

I. Sample Receipt and Technical Holding Times

All samples were received in good condition.

All technical holding time requirements were met.

II. Initial Calibration

All criteria for the initial calibration were met.

Counting and detector efficiency were determined for each detector and each radionuclide.

III. Continuing Calibration

Continuing calibration and background determination were performed at the required frequencies. Results were within laboratory control limits.

IV. Blanks

Laboratory blanks were analyzed as required by the method. Blank results contained less than the minimum detectable concentrations (MDC) with the following exceptions:

Blank ID	Isotope	Concentration	Associated Samples
PB (prep blank)	Thorium-230	0.07819 pCi/g	789UMR-TP05-0006-01 789UMR-TP05-0612-01 789UMR-TP05-1218-01 789UMR-TP05-1824-01 789UMR-TP05-1824-02 789UMR-TP05-2430-01 789UMR-TP05-3036-01 789UMR-TP05-3654-01 789UMR-TP06-0006-01 789UMR-TP06-0612-01 789UMR-TP06-1216-01 789UMR-TP07-0006-01 789UMR-TP07-0612-01 789UMR-TP07-1218-01 789UMR-TP07-1824-01 789UMR-TP07-2428-01 789UMR-TP08-0006-1 789UMR-TP08-0612-01
PB (prep blank)	Thorium-230	0.1495 pCi/g	789UMR-TP08-3032-01 789UMR-TP11-0006-01 789UMR-TP11-0612-01 789UMR-TP11-1218-01 789UMR-TP11-1824-01 789UMR-TP11-2430-01 789UMR-TP12-0002-01 789UMR-TP12-0204-01 789UMR-TP13-1218-01 789UMR-TP13-1824-01

Sample activities were compared to activities detected in the laboratory blanks. The sample activities were either not detected or were significantly greater (>5X blank activity) than the activities found in the associated laboratory blanks.

V. Field Blanks

No field blanks were identified in this SDG.

VI. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) sample analysis was performed on an associated project sample. Percent recoveries (%R) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	MS (%R) (Limits)	MSD (%R) (Limits)	Flag	A or P
789UMR-TP08-1218-01MS/MSD (789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01)	Thorium-230	-	133 (76-115)	J (all detects)	A

Duplicate error ratios (DER) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Isotope	DER (Limits)	Flag	A or P
789UMR-TP08-1218-01MS/MSD (789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01)	Thorium-230	3.03 (≤3)	J (all detects)	A

VII. Duplicate Sample Analysis

Duplicate (DUP) sample analysis was performed on an associated project sample. Results were within QC limits.

VIII. Laboratory Control Samples

Laboratory control samples (LCS) were analyzed as required by the method. Percent recoveries (%R) were within QC limits.

IX. Field Duplicates

Samples 789UMR-TP05-1824-01 and 789UMR-TP05-1824-02 and samples 789UMR-TP08-1218-01 and 789UMR-TP08-1218-02 were identified as field duplicates. No results were detected in any of the samples with the following exceptions:

Isotope	Activity (pCi/g)		RPD
	789UMR-TP05-1824-01	789UMR-TP05-1824-02	
Thorium-228	216	248	14
Thorium-230	31.8	35.8	12
Thorium-232	193	235	20

Isotope	Activity (pCi/g)		RPD
	789UMR-TP08-1218-01	789UMR-TP08-1218-02	
Thorium-228	3.01	3.06	2
Thorium-230	1.17	0.998	16
Thorium-232	2.83	2.89	2

X. Tracer Recovery

All tracer recoveries were within validation criteria with the following exceptions:

Sample ID	Tracer Isotope	%R (Limits)	Affected Isotope	Flag	A or P
789UMR-TP06-1216-01	Thorium-229	112 (30-110)	All isotopes	J (all detects)	P

XI. Minimum Detectable Concentrations

All minimum detectable concentrations (MDC) met reporting limits (RL) with the following exceptions:

Sample	Isotope	MDC	RL
789UMR-TP05-1824-02	Th-228	1.33 pCi/g	1.00 pCi/g
789UMR-TP05-2430-01	Th-228	1.18 pCi/g	1.00 pCi/g
789UMR-TP11-0006-01	Th-228 Th-230 Th-232	7.36 pCi/g 4.17 pCi/g 3.59 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP11-0612-01	Th-228 Th-230 Th-232	7.82 pCi/g 4.68 pCi/g 4.02 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP11-1218-01	Th-228 Th-230 Th-232	6.15 pCi/g 4.82 pCi/g 4.8 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP11-1824-01	Th-228 Th-230 Th-232	6.94 pCi/g 5.91 pCi/g 4.85 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP11-2430-01	Th-228 Th-230 Th-232	8.41 pCi/g 5.03 pCi/g 5 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP12-0002-01	Th-228 Th-230 Th-232	6.47 pCi/g 5.86 pCi/g 5.47 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP12-0204-01	Th-228 Th-230 Th-232	7.33 pCi/g 5.2 pCi/g 4.61 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP13-1218-01	Th-228 Th-230 Th-232	9.18 pCi/g 4.73 pCi/g 5.08 pCi/g	1.00 pCi/g 1.00 pCi/g 1.00 pCi/g
789UMR-TP13-1824-01	Th-228	1.57 pCi/g	1.00 pCi/g

The MDC was greater than the RL as listed above.

XII. Sample Result Verification

All sample result verifications were acceptable.

XIII. Overall Assessment of Data

The analysis was conducted within all specifications of the method. No results were rejected in this SDG.

Due to MS/MSD %R and DER and tracer recovery %R, data were qualified as estimated in twelve samples.

The quality control criteria reviewed, other than those discussed above, were met and are considered acceptable.

789 Upper Mountain Road Site
Isotopic Thorium - Data Qualification Summary - SDG 160-39298-1

Sample	Isotope	Flag	A or P	Reason
789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01	Thorium-230	J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
789UMR-TP08-1218-01 789UMR-TP08-1218-02 789UMR-TP08-1824-01 789UMR-TP09-0006-01 789UMR-TP09-0612-01 789UMR-TP09-1218-01 789UMR-TP09-1824-01 789UMR-TP10-0006-01 789UMR-TP10-0612-01 789UMR-TP10-1218-01 789UMR-TP10-1824-01	Thorium-230	J (all detects)	A	Matrix spike/Matrix spike duplicate (DER)
789UMR-TP06-1216-01	All isotopes	J (all detects)	P	Tracer recoveries (%R)

789 Upper Mountain Road Site
Isotopic Thorium - Laboratory Blank Data Qualification Summary - SDG 160-39298-1

No Sample Data Qualified in this SDG

789 Upper Mountain Road Site
Isotopic Thorium - Field Blank Data Qualification Summary - SDG 160-39298-1

No Sample Data Qualified in this SDG

LDC #: 49606A73
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/12/20
Page: 1 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Thorium (Method A-01-R)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Sample receipt/Technical holding times	A,A	
II.	Initial calibration	A	
III.	Calibration verification	A	
IV.	Laboratory Blanks	SW	
V.	Field blanks	N	
VI.	Matrix Spike/Matrix Spike Duplicates	SW	
VII.	Duplicates	A	
VIII.	Laboratory control samples	A	LCS
IX.	Field duplicates	SW	(4,5) (19,20)
X.	Tracer Recovery	SW	
XI.	Minimum detectable ~~activity~~ concentration (MD~~A~~C)	SW	
XII.	Sample result verification	A	
XIII.	Overall assessment of data	A	

Note: A = Acceptable; N = Not provided/applicable; SW = See worksheet; ND = No compounds detected; R = Rinsate; FB = Field blank; D = Duplicate; TB = Trip blank; EB = Equipment blank; SB=Source blank; OTHER:

	Client ID	Lab ID	Matrix	Date
1	789UMR-TP05-0006-01	160-39298-1	Soil	08/26/20
2	789UMR-TP05-0612-01	160-39298-2	Soil	08/26/20
3	789UMR-TP05-1218-01	160-39298-3	Soil	08/26/20
4	789UMR-TP05-1824-01	160-39298-4	Soil	08/26/20
5	789UMR-TP05-1824-02	160-39298-5	Soil	08/26/20
6	789UMR-TP05-2430-01	160-39298-6	Soil	08/26/20
7	789UMR-TP05-3036-01	160-39298-7	Soil	08/26/20
8	789UMR-TP05-3654-01	160-39298-8	Soil	08/26/20
9	789UMR-TP06-0006-01	160-39298-9	Soil	08/26/20
10	789UMR-TP06-0612-01	160-39298-10	Soil	08/26/20
11	789UMR-TP06-1216-01	160-39298-11	Soil	08/26/20
12	789UMR-TP07-0006-01	160-39298-12	Soil	08/25/20
13	789UMR-TP07-0612-01	160-39298-13	Soil	08/25/20
14	789UMR-TP07-1218-01	160-39298-14	Soil	08/25/20
15	789UMR-TP07-1824-01	160-39298-15	Soil	08/25/20
16	789UMR-TP07-2428-01	160-39298-16	Soil	08/25/20

LDC #: 49606A73
SDG #: 160-39298-1
Laboratory: Eurofins

VALIDATION COMPLETENESS WORKSHEET
Level IV

Date: 11/12/20
Page: 2 of 2
Reviewer:
2nd Reviewer:

METHOD: Isotopic Thorium (Method A-01-R)

17	789UMR-TP08-0006-1	160-39298-17	Soil	08/25/20
18	789UMR-TP08-0612-01	160-39298-18	Soil	08/25/20
19	789UMR-TP08-1218-01	160-39298-19	Soil	08/25/20
20	789UMR-TP08-1218-02	160-39298-20	Soil	08/25/20
21	789UMR-TP08-1824-01	160-39298-21	Soil	08/25/20
22	789UMR-TP08-3032-01	160-39298-22	Soil	08/25/20
23	789UMR-TP09-0006-01	160-39298-23	Soil	08/25/20
24	789UMR-TP09-0612-01	160-39298-24	Soil	08/25/20
25	789UMR-TP09-1218-01	160-39298-25	Soil	08/25/20
26	789UMR-TP09-1824-01	160-39298-26	Soil	08/25/20
27	789UMR-TP10-0006-01	160-39298-27	Soil	08/25/20
28	789UMR-TP10-0612-01	160-39298-28	Soil	08/25/20
29	789UMR-TP10-1218-01	160-39298-29	Soil	08/25/20
30	789UMR-TP10-1824-01	160-39298-30	Soil	08/25/20
31	789UMR-TP11-0006-01	160-39298-31	Soil	08/25/20
32	789UMR-TP11-0612-01	160-39298-32	Soil	08/25/20
33	789UMR-TP11-1218-01	160-39298-33	Soil	08/25/20
34	789UMR-TP11-1824-01	160-39298-34	Soil	08/25/20
35	789UMR-TP11-2430-01	160-39298-35	Soil	08/25/20
36	789UMR-TP12-0002-01	160-39298-36	Soil	08/26/20
37	789UMR-TP12-0204-01	160-39298-37	Soil	08/26/20
38	789UMR-TP12-0406-01	160-39298-38	Soil	08/26/20
39	789UMR-TP13-0006-01	160-39298-39	Soil	08/26/20
40	789UMR-TP13-0612-01	160-39298-40	Soil	08/26/20
41	789UMR-TP13-1218-01	160-39298-41	Soil	08/26/20
42	789UMR-TP13-1824-01	160-39298-42	Soil	08/26/20
43	789UMR-TP05-1824-01MS	160-39298-4MS	Soil	08/26/20
44	789UMR-TP05-1824-01MSD	160-39298-4MSD	Soil	08/26/20
45	789UMR-TP08-1218-01MS	160-39298-19MS	Soil	08/25/20
46	789UMR-TP08-1218-01MSD	160-39298-19MSD	Soil	08/25/20
47	789UMR-TP08-3032-01DUP	160-39298-22DUP	Soil	08/25/20
48	789UMR-TP12-0406-01DUP	160-39298-38DUP	Soil	08/26/20
49				
50				
51				

Reviewer:CR

METHOD: Radiochemistry				
Validation Area	**Yes**	**No**	**NA**	**Comments**
I. Technical holding times				
Were all technical holding times were met?	X			
II. Calibration				
Were all instuments and detectors calibrated as required?	X			
Were NIST traceable standards used for all calibrations?	X			
Was the check source identified by activity and radionuclide?	X			
Were check sources including background counts analyzed at the required frequency and within laboratory control limits?	X			
III. Blanks				
Was a method blank assoicated with every sample in this SDG?	X			
Were any activities detected in the method blank greater than the minimum detectable concentration (MDC)?	X			
IV. Matrix Spike/Matrix Spike Duplicates/Laboratory Duplicates				
Were MS/MSD recoveries with the QC limits? (If the sample concentration exceeded the spike concentration by a factor of 4, no action was taken.)	X			
Were the MS/MSD or laboratory duplicate relative percent differences (RPDs) within the QC limits?		X		
V. Chemical Recovery				
Were recoveries within QC limits (when applicable)?		X		
VI. Laboratory Control Samples				
Was a LCS analyzed for each batch in the SDG?	X			
Were the LCS recoveries and RPDs (if applicable) within QC limits?	X			
VII. Sample Result Verification				
Were the MDCs less than the reporting limit (RL)?		X		
VIII. Overall Assessment of Data				
Was the overall assessment of the data found to be acceptable?	X			
IX. Field Duplicates				
Were field duplicates identifed in this SDG?	X			
Were target analytes detected in the field duplicates?	X			
X. Field Blanks				
Were field blanks identified in this SDG?		X		
Were target analytes detected in the field blanks?			X	

VALIDATION FINDINGS WORKSHEET

Laboratory Blank Contamination (PB/ICB/CCB)

Reviewer:CR

METHOD: Radiochemistry

Sample Concentration, unless otherwise noted: pCi/g Associated Samples: 1-18

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
Th-230	0.07819										

Sample Concentration, unless otherwise noted: pCi/g Associated Samples: 22, 31-37, 41, 42

			Sample Identification								
Isotope	**PB (pCi/g)**	**Action Level**	No quals								
Th-230	0.1495										

VALIDATION FINDINGS WORKSHEETS

Matrix Spike/Matrix Spike Duplicates

Reviewer:CR

METHOD: Radiochemistry

MS/MSD analysis was performed by the laboratory. All MS/MSD percent recoveries (%R) and duplciate error rations (DERs) were within the acceptable limits with the following exceptions.

MS/MSD ID	Matrix	Isotope	MS %R	MSD %R	%R Limit	DER	DER Limit	Assocaited Samples	Qualification	Det/ND
45, 46	s	Th-230		133	76-115			19-21, 23-30	Jdet/A	Det
		Th-230				3.03	3	19-21, 23-30	J/UJ/A	Det

Comments:

Field Duplicates

Reviewer:CR

METHOD: Radiochemistry

Isotope	Concentration (pCi/g)		RPD
	4	5	
Th-228	216	248	14
Th-230	31.8	35.8	12
Th-232	193	235	20

Isotope	Concentration (pCi/g)		RPD
	19	20	
Th-228	3.01	3.06	2
Th-230	1.17	0.998	16
Th-232	2.83	2.89	2

Chemical Recovery

Reviewer:CR

METHOD: Radiochemistry

A LCS was analzyed for each matrix at the requried frequencies. All LCS percent recoveries (%R) were within the acceptable limits with the following exceptions.

Tracer	Matrix	Associated Isotope	Tracer %R	%R Limit	Assocaited Samples	Qualification	Det/ND
Th-229	s	All isotopic Th	112	30-110	11	J/UJ/P	Det

Comments:

VALIDATION FINDINGS WORKSHEETS

Minimal Detectable Concentration

Reviewer:CR

METHOD: Radiochemsitry

All requested minimal detectable concentrations (MDC) were met with the following exceptions.

Sample ID	Isotope	QAPP RL (pCi/g)	Laboratory MDC (pCi/g)	Qualification
5	Th-228	1.00	1.33	Text
6	Th-228	1.00	1.18	
31	Th-228	1.00	7.36	
	Th-230	1.00	4.17	
	Th-232	1.00	3.59	
32	Th-228	1.00	7.82	
	Th-230	1.00	4.68	
	Th-232	1.00	4.02	
33	Th-228	1.00	6.15	
	Th-230	1.00	4.82	
	Th-232	1.00	4.8	
34	Th-228	1.00	6.94	
	Th-230	1.00	5.91	
	Th-232	1.00	4.85	
35	Th-228	1.00	8.41	
	Th-230	1.00	5.03	
	Th-232	1.00	5	
36	Th-228	1.00	6.47	
	Th-230	1.00	5.86	
	Th-232	1.00	5.47	
37	Th-228	1.00	7.33	
	Th-230	1.00	5.2	
	Th-232	1.00	4.61	
41	Th-228	1.00	9.18	
	Th-230	1.00	4.73	
	Th-232	1.00	5.08	
42	Th-228	1.00	1.57	

VALIDATION FINDINGS CHECKLIST

Quality Control Sample Recalculations

Reviewer:CR

METHOD: Radiochemistry

Percent recoveries (%R) for the laboratory control sample (LCS), matrix spike (MS), and chemical recovery were recalcuated using the following formula.

%R = (Found/True) x 100

Found = concentration of each analyte measured in the analysis. For the MS calculation, Found = SSR (Spiked Sample Result) - SR (Sample Result)

True = concentraiton of each analyte in the source

The sample and duplciate relative percent difference (RPD) was recalcuated using the following formula.

RPD = (Absolute value(S-D)x 200) / (S+D)

S = Original sample concentraiton

D = Duplciate sample concentration

In the case, where the laboratory the reported relative error ration (RER) instead of RPD for the laboratory duplicates, the following formula was used.

RER = (Absolute value (S-D))/(SU + DU)

S = Original sample concentraiton

D = Duplciate sample concentration

SU = Sample uncertainty

DU = Duplicate uncertainty

Sample ID	Type of Analysis	Isotope	Found/S	True/D	Recalcuated %R/RPD/RER	Reported %R/RPD/RER	Acceptable (Y/N)
LCS	LCS	Th-230	4.219	4.01	105	105	Y
45	MS	Th-230	3.898	4.01	97	97	Y
48	Duplicate	Th-228	4.9	4.718	4	4	Y
19	Chemical recovery	Th-229	4.61	5.97	77.2	77.3	Y

VALIDATION FINDINGS CHECKLIST

Sample Calculation Verification

Reviewer:CR

METHOD: Radiochemistry

Analytes were recalcuated and verified using the following equation.

Concentration = (Result from raw data x Final volume x Dilution factor) / (Percent solids (if applicable) x Initial weight or volume)

Sample ID	Analyte	Raw Data (counts)	Branch Ratio	Initial Weight (g)	Time (minutes)	Efficiency	Tracer (%)	Th-229 correction	Reported Result (pCi/g)	Recalcuated Result (pCi/g)	Acceptable (Y/N)
1	Th-228	1711.5	99.8	0.5	240	28.89	95.26	0	23.4	23.4	Y
2	Th-230	507	99.7	0.5	240	22.66	84.2	0	9.93	10.0	Y
3	Th-232	1505	100.2	0.2	240	27.22	93.21	0	55.6	55.6	Y
4	Th-228	2084.5	99.8	0.1	240	27.04	66.94	0	216	217	Y
5	Th-230	351.75	99.7	0.1	240	22.69	81.13	0	35.8	36.0	Y
6	Th-232	1704.25	100.2	0.1	240	23.51	91.19	0	148	149	Y
7	Th-228	1372.5	99.8	0.1	240	24.34	105.04	0	102	101	Y
8	Th-230	691.25	99.7	1	240	27.37	69.02	0	6.87	6.89	Y
9	Th-232	438.5	100.2	1.01	240	26.76	93.05	0	3.3	3.3	Y
10	Th-228	2186.5	99.8	1	240	28.89	85.2	0	16.8	17	Y
11	Th-230	317	99.7	1	240	22.66	112.24	0	2.34	2.35	Y
12	Th-232	2296.75	100.2	0.5035	240	27.02	84.96	0	37.2	37.2	Y
13	Th-228	1227.5	99.8	0.2011	240	26.8	80.48	0	53.3	53.2	Y
14	Th-230	238.75	99.7	1.0027	240	28.38	89.66	0	1.76	1.76	Y
15	Th-232	547.5	100.2	1.0063	240	27.12	85.58	0	4.39	4.39	Y
16	Th-228	843.5	99.8	0.9998	240	23	106.08	0	6.51	6.50	Y
17	Th-230	158.25	99.7	1.006	240	23.69	99.94	0	1.25	1.25	Y
18	Th-232	139	100.2	0.1987	240	27.77	86.54	0	5.45	5.45	Y
19	Th-228	343.25	99.8	1	240	27.37	77.34	0.03914	3.01	3.01	Y
20	Th-230	154.25	99.7	0.99	240	26.18	102.21	0.095339	0.998	1.001	Y
21	Th-232	449.5	100.2	0.99	240	26.31	91.95	0.0071	3.49	3.51	Y
22	Th-228	179.25	99.8	0.1004	240	27.77	95.2	0	12.7	12.7	Y
23	Th-230	146.25	99.7	1.006	240	27.02	83.32	0.095339	1.12	1.12	Y
24	Th-232	64.25	100.2	1.0063	240	26.8	49.69	0.0071	0.891	0.891	Y
25	Th-228	126.5	99.8	1.0042	240	27.12	73.81	0.03914	1.14	1.14	Y

Sample Calculation Verification

Reviewer:CR

26	Th-230	194.25	99.7	1.0058	240	23	105.01	0.095339	1.41	1.41	Y
27	Th-232	278	100.2	0.9938	240	27.77	78.8	0.0071	2.39	2.39	Y
28	Th-228	557.25	99.8	0.9962	240	27.16	84.27	0.03914	4.56	4.56	Y
29	Th-230	143.5	99.7	0.9986	240	26.51	84.66	0.095339	1.11	1.11	Y
30	Th-232	216.75	100.2	1.0013	240	24.89	96.24	0.0071	1.69	1.69	Y
31	Th-228	49.5	99.8	0.01	240	26.51	94.92	0	36.9	37.0	Y
32	Th-230	163.5	99.7	0.01	240	24.89	90.27	0	137	137	Y
33	Th-232	1990	100.2	0.01	240	26.77	97.39	0	1430	1430	Y
34	Th-228	1410.5	99.8	0.0099	240	24.22	99.37	0	1110	1113	Y
35	Th-230	33.25	99.7	0.0101	240	23	109.82	0	27	25	Y
36	Th-232	1618	100.2	0.0099	240	27.77	83.01	0	1330	1328	Y
37	Th-228	176.75	99.8	0.01	240	25.17	108.29	0	122	122	Y
38	Th-230	215	99.7	0.9934	240	25.14	82	0.095339	1.88	1.88	Y
39	Th-232	3381.75	100.2	1	240	25.68	79.45	0.0071	30.9	31.0	Y
40	Th-228	4577.75	99.8	0.99	240	27.22	63.83	0.03914	49.9	50.0	Y
41	Th-230	191.25	99.7	0.01	240	27.15	90.24	0	146	147	Y
42	Th-232	653.75	100.2	0.0504	240	26.84	91.68	0	98.8	98.7	Y

789 Upper Mountain - LDC# 49606

SDG: 160-39298-1

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0006-01	160-39298-1	Thorium	9/29/2020	2.2		J	J		0.12	0.079	pCi/g
789UMR-TP05-0006-01	160-39298-1	Thorium	9/29/2020	20		J	J		1.1	0.72	mg/Kg
789UMR-TP05-0006-01	160-39298-1	U-233	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP05-0006-01	160-39298-1	U-234	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP05-0006-01	160-39298-1	U-235	9/30/2020	0.096		J	J		0.03	0.016	mg/Kg
789UMR-TP05-0006-01	160-39298-1	U-236	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP05-0006-01	160-39298-1	U-238	9/30/2020	13	B				0.03	0.016	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0006-01	160-39298-1	Thorium-228	10/28/2020	23.4				2.27	0.20		pCi/g
789UMR-TP05-0006-01	160-39298-1	Thorium-230	10/28/2020	4.61				0.637	0.14		pCi/g
789UMR-TP05-0006-01	160-39298-1	Thorium-232	10/28/2020	22.8				2.22	0.14		pCi/g
789UMR-TP05-0006-01	160-39298-1	Uranium-233/234	9/29/2020	13.5	F	J	J	1.37	0.09		pCi/g
789UMR-TP05-0006-01	160-39298-1	Uranium-235/236	9/29/2020	0.582				0.189	0.09		pCi/g
789UMR-TP05-0006-01	160-39298-1	Uranium-238	9/29/2020	13.4	F	J	J	1.37	0.08		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0006-01	160-39298-1	Actinium 228	10/6/2020	95.6				9.97	1.22		pCi/g
789UMR-TP05-0006-01	160-39298-1	Bismuth-212	10/6/2020	99.4				11.5	5.05		pCi/g
789UMR-TP05-0006-01	160-39298-1	Bismuth-214	10/6/2020	23.3				2.71	0.92		pCi/g
789UMR-TP05-0006-01	160-39298-1	Cesium-137	10/6/2020	0.269	U		U	0.487	0.80		pCi/g
789UMR-TP05-0006-01	160-39298-1	Lead-212	10/6/2020	110				14.3	0.72		pCi/g
789UMR-TP05-0006-01	160-39298-1	Lead-214	10/6/2020	24.3				2.64	0.82		pCi/g
789UMR-TP05-0006-01	160-39298-1	Potassium-40	10/6/2020	24.5				5.45	3.67		pCi/g
789UMR-TP05-0006-01	160-39298-1	Protactinium-234	10/6/2020	0.825	U		U	2.57	4.24		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0006-01	160-39298-1	Radium-224	10/6/2020	110				14.3	0.72		pCi/g
789UMR-TP05-0006-01	160-39298-1	Radium-226	10/6/2020	23.3				2.71	0.92		pCi/g
789UMR-TP05-0006-01	160-39298-1	Radium-228	10/6/2020	95.6				9.97	1.22		pCi/g
789UMR-TP05-0006-01	160-39298-1	Thallium-208	10/6/2020	34.1				3.64	0.49		pCi/g
789UMR-TP05-0006-01	160-39298-1	Thorium-234	10/6/2020	6.81	U	UJ	UJ	2.25	26		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0612-01	160-39298-10	Thorium	9/29/2020	10		J	J		0.98	0.66	mg/Kg
789UMR-TP06-0612-01	160-39298-10	Thorium	9/29/2020	1.1		J	J		0.11	0.073	pCi/g
789UMR-TP06-0612-01	160-39298-10	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-0612-01	160-39298-10	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-0612-01	160-39298-10	U-235	9/30/2020	0.045		J	J		0.02	0.015	mg/Kg
789UMR-TP06-0612-01	160-39298-10	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-0612-01	160-39298-10	U-238	9/30/2020	6.1	B				0.02	0.015	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0612-01	160-39298-10	Thorium-228	10/29/2020	16.8				1.58	0.11		pCi/g
789UMR-TP06-0612-01	160-39298-10	Thorium-230	10/29/2020	3.42				0.434	0.08		pCi/g
789UMR-TP06-0612-01	160-39298-10	Thorium-232	10/29/2020	15.9				1.51	0.08		pCi/g
789UMR-TP06-0612-01	160-39298-10	Uranium-233/234	9/29/2020	2.73	F	J	J	0.389	0.10		pCi/g
789UMR-TP06-0612-01	160-39298-10	Uranium-235/236	9/29/2020	0.0164	U		U	0.0531	0.10		pCi/g
789UMR-TP06-0612-01	160-39298-10	Uranium-238	9/29/2020	2.51	F	J	J	0.367	0.10		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0612-01	160-39298-10	Actinium 228	10/2/2020	38.8				4.15	0.91		pCi/g
789UMR-TP06-0612-01	160-39298-10	Bismuth-212	10/2/2020	39.9				6.31	4.14		pCi/g
789UMR-TP06-0612-01	160-39298-10	Bismuth-214	10/2/2020	10.2				1.4	0.67		pCi/g
789UMR-TP06-0612-01	160-39298-10	Cesium-137	10/2/2020	0.218	U		U	0.35	0.57		pCi/g
789UMR-TP06-0612-01	160-39298-10	Lead-212	10/2/2020	41.4				4.41	0.51		pCi/g
789UMR-TP06-0612-01	160-39298-10	Lead-214	10/2/2020	10.3				1.33	0.76		pCi/g
789UMR-TP06-0612-01	160-39298-10	Potassium-40	10/2/2020	16.3				4.33	2.95		pCi/g
789UMR-TP06-0612-01	160-39298-10	Protactinium-234	10/2/2020	0.84	U		U	0.936	1.04		pCi/g
789UMR-TP06-0612-01	160-39298-10	Radium-224	10/2/2020	41.4				4.41	0.51		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0612-01	160-39298-10	Radium-226	10/2/2020	10.2				1.4	0.67		pCi/g
789UMR-TP06-0612-01	160-39298-10	Radium-228	10/2/2020	38.8				4.15	0.91		pCi/g
789UMR-TP06-0612-01	160-39298-10	Thallium-208	10/2/2020	13.6				1.52	0.35		pCi/g
789UMR-TP06-0612-01	160-39298-10	Thorium-234	10/2/2020	4.74	U	UJ	UJ	2.3	16.8		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-1216-01	160-39298-11	Thorium	9/29/2020	0.85		J	J		0.11	0.072	pCi/g
789UMR-TP06-1216-01	160-39298-11	Thorium	9/29/2020	7.7		J	J		0.97	0.65	mg/Kg
789UMR-TP06-1216-01	160-39298-11	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-1216-01	160-39298-11	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-1216-01	160-39298-11	U-235	9/30/2020	0.032		J	J		0.02	0.015	mg/Kg
789UMR-TP06-1216-01	160-39298-11	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP06-1216-01	160-39298-11	U-238	9/30/2020	4.6	B				0.02	0.015	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-1216-01	160-39298-11	Thorium-228	10/29/2020	9.07		J	J	0.922	0.09		pCi/g
789UMR-TP06-1216-01	160-39298-11	Thorium-230	10/29/2020	2.34		J	J	0.329	0.06		pCi/g
789UMR-TP06-1216-01	160-39298-11	Thorium-232	10/29/2020	8.52		J	J	0.873	0.04		pCi/g
789UMR-TP06-1216-01	160-39298-11	Uranium-233/234	9/29/2020	3.41	F	J	J	0.427	0.07		pCi/g
789UMR-TP06-1216-01	160-39298-11	Uranium-235/236	9/29/2020	0.179				0.0851	0.06		pCi/g
789UMR-TP06-1216-01	160-39298-11	Uranium-238	9/29/2020	3.53	F	J	J	0.437	0.05		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-1216-01	160-39298-11	Actinium 228	10/2/2020	15.9				1.88	0.45		pCi/g
789UMR-TP06-1216-01	160-39298-11	Bismuth-212	10/2/2020	17.1				2.8	2.37		pCi/g
789UMR-TP06-1216-01	160-39298-11	Bismuth-214	10/2/2020	4.24				0.666	0.38		pCi/g
789UMR-TP06-1216-01	160-39298-11	Cesium-137	10/2/2020	0.111	U		U	0.171	0.28		pCi/g
789UMR-TP06-1216-01	160-39298-11	Lead-212	10/2/2020	18.7				2.47	0.29		pCi/g
789UMR-TP06-1216-01	160-39298-11	Lead-214	10/2/2020	4.59				0.576	0.36		pCi/g
789UMR-TP06-1216-01	160-39298-11	Potassium-40	10/2/2020	16.8				2.75	1.02		pCi/g
789UMR-TP06-1216-01	160-39298-11	Protactinium-234	10/2/2020	-0.0643	U		U	0.194	1.82		pCi/g
789UMR-TP06-1216-01	160-39298-11	Radium-224	10/2/2020	18.7				2.47	0.29		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-1216-01	160-39298-11	Radium-226	10/2/2020	4.24				0.666	0.38		pCi/g
789UMR-TP06-1216-01	160-39298-11	Radium-228	10/2/2020	15.9				1.88	0.45		pCi/g
789UMR-TP06-1216-01	160-39298-11	Thallium-208	10/2/2020	5.88				0.703	0.20		pCi/g
789UMR-TP06-1216-01	160-39298-11	Thorium-234	10/2/2020	1.83	U	UJ	UJ	0.832	11.3		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0006-01	160-39298-12	Thorium	9/29/2020	10		J	J		1.1	0.76	mg/Kg
789UMR-TP07-0006-01	160-39298-12	Thorium	9/29/2020	1.1		J	J		0.12	0.083	pCi/g
789UMR-TP07-0006-01	160-39298-12	U-233	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP07-0006-01	160-39298-12	U-234	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP07-0006-01	160-39298-12	U-235	9/30/2020	0.04		J	J		0.03	0.017	mg/Kg
789UMR-TP07-0006-01	160-39298-12	U-236	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP07-0006-01	160-39298-12	U-238	9/30/2020	5.2	B				0.03	0.017	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0006-01	160-39298-12	Thorium-228	10/30/2020	36.9				3.47	0.22		pCi/g
789UMR-TP07-0006-01	160-39298-12	Thorium-230	10/30/2020	6.67				0.865	0.10		pCi/g
789UMR-TP07-0006-01	160-39298-12	Thorium-232	10/30/2020	37.2				3.49	0.07		pCi/g
789UMR-TP07-0006-01	160-39298-12	Uranium-233/234	9/30/2020	8.44	F	J	J	0.905	0.05		pCi/g
789UMR-TP07-0006-01	160-39298-12	Uranium-235/236	9/30/2020	0.711				0.192	0.03		pCi/g
789UMR-TP07-0006-01	160-39298-12	Uranium-238	9/30/2020	8.01	F	J	J	0.868	0.02		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0006-01	160-39298-12	Actinium 228	10/2/2020	51.2				5.44	0.98		pCi/g
789UMR-TP07-0006-01	160-39298-12	Bismuth-212	10/2/2020	51.4				6.64	3.91		pCi/g
789UMR-TP07-0006-01	160-39298-12	Bismuth-214	10/2/2020	10.1				1.23	0.60		pCi/g
789UMR-TP07-0006-01	160-39298-12	Cesium-137	10/2/2020	0.0459	U		U	0.319	0.53		pCi/g
789UMR-TP07-0006-01	160-39298-12	Lead-212	10/2/2020	58.1				7.59	0.55		pCi/g
789UMR-TP07-0006-01	160-39298-12	Lead-214	10/2/2020	11.2				1.29	0.57		pCi/g
789UMR-TP07-0006-01	160-39298-12	Potassium-40	10/2/2020	22.1				4.27	2.44		pCi/g
789UMR-TP07-0006-01	160-39298-12	Protactinium-234	10/2/2020	0.804	U		U	1.47	3.02		pCi/g
789UMR-TP07-0006-01	160-39298-12	Radium-224	10/2/2020	58.1				7.59	0.55		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0006-01	160-39298-12	Radium-226	10/2/2020	10.1				1.23	0.60		pCi/g
789UMR-TP07-0006-01	160-39298-12	Radium-228	10/2/2020	51.2				5.44	0.98		pCi/g
789UMR-TP07-0006-01	160-39298-12	Thallium-208	10/2/2020	17.3				1.9	0.36		pCi/g
789UMR-TP07-0006-01	160-39298-12	Thorium-234	10/2/2020	4.23	U	UJ	UJ	1.72	20.8		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0612-01	160-39298-13	Thorium	9/29/2020	1.7		J	J		0.11	0.075	pCi/g
789UMR-TP07-0612-01	160-39298-13	Thorium	9/29/2020	15		J	J		1	0.68	mg/Kg
789UMR-TP07-0612-01	160-39298-13	U-233	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP07-0612-01	160-39298-13	U-234	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP07-0612-01	160-39298-13	U-235	9/30/2020	0.061		J	J		0.03	0.015	mg/Kg
789UMR-TP07-0612-01	160-39298-13	U-236	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP07-0612-01	160-39298-13	U-238	9/30/2020	7.4	B				0.03	0.015	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0612-01	160-39298-13	Thorium-228	10/30/2020	53.3				5.41	0.50		pCi/g
789UMR-TP07-0612-01	160-39298-13	Thorium-230	10/30/2020	9.14				1.48	0.24		pCi/g
789UMR-TP07-0612-01	160-39298-13	Thorium-232	10/30/2020	53.3				5.41	0.30		pCi/g
789UMR-TP07-0612-01	160-39298-13	Uranium-233/234	9/30/2020	10.9	F	J	J	1.12	0.05		pCi/g
789UMR-TP07-0612-01	160-39298-13	Uranium-235/236	9/30/2020	0.749				0.202	0.03		pCi/g
789UMR-TP07-0612-01	160-39298-13	Uranium-238	9/30/2020	10.7	F	J	J	1.11	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0612-01	160-39298-13	Actinium 228	10/2/2020	64.1				6.78	1.15		pCi/g
789UMR-TP07-0612-01	160-39298-13	Bismuth-212	10/2/2020	66.7				8.61	5.33		pCi/g
789UMR-TP07-0612-01	160-39298-13	Bismuth-214	10/2/2020	13				1.57	0.78		pCi/g
789UMR-TP07-0612-01	160-39298-13	Cesium-137	10/2/2020	-0.00369	U		U	0.41	0.69		pCi/g
789UMR-TP07-0612-01	160-39298-13	Lead-212	10/2/2020	71.1				7.53	0.74		pCi/g
789UMR-TP07-0612-01	160-39298-13	Lead-214	10/2/2020	13.5				1.59	0.82		pCi/g
789UMR-TP07-0612-01	160-39298-13	Potassium-40	10/2/2020	25.1				4.14	1.72		pCi/g
789UMR-TP07-0612-01	160-39298-13	Protactinium-234	10/2/2020	-0.103	U		U	0.324	4.41		pCi/g
789UMR-TP07-0612-01	160-39298-13	Radium-224	10/2/2020	71.1				7.53	0.74		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-0612-01	160-39298-13	Radium-226	10/2/2020	13				1.57	0.78		pCi/g
789UMR-TP07-0612-01	160-39298-13	Radium-228	10/2/2020	64.1				6.78	1.15		pCi/g
789UMR-TP07-0612-01	160-39298-13	Thallium-208	10/2/2020	23.8				2.57	0.50		pCi/g
789UMR-TP07-0612-01	160-39298-13	Thorium-234	10/2/2020	2.76	U	UJ	UJ	8.74	24.8		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1218-01	160-39298-14	Thorium	9/29/2020	0.95		J	J		0.1	0.068	pCi/g
789UMR-TP07-1218-01	160-39298-14	Thorium	9/29/2020	8.7		J	J		0.91	0.62	mg/Kg
789UMR-TP07-1218-01	160-39298-14	U-233	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP07-1218-01	160-39298-14	U-234	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP07-1218-01	160-39298-14	U-235	9/30/2020	0.027		J	J		0.02	0.014	mg/Kg
789UMR-TP07-1218-01	160-39298-14	U-236	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP07-1218-01	160-39298-14	U-238	9/30/2020	3.5	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1218-01	160-39298-14	Thorium-228	10/30/2020	7.41				0.779	0.09		pCi/g
789UMR-TP07-1218-01	160-39298-14	Thorium-230	10/30/2020	1.76				0.272	0.05		pCi/g
789UMR-TP07-1218-01	160-39298-14	Thorium-232	10/30/2020	6.64				0.711	0.04		pCi/g
789UMR-TP07-1218-01	160-39298-14	Uranium-233/234	10/2/2020	3.44	F	J	J	0.446	0.06		pCi/g
789UMR-TP07-1218-01	160-39298-14	Uranium-235/236	10/2/2020	0.432				0.139	0.05		pCi/g
789UMR-TP07-1218-01	160-39298-14	Uranium-238	10/2/2020	3.23	F	J	J	0.425	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1218-01	160-39298-14	Actinium 228	10/2/2020	14.1				1.65	0.41		pCi/g
789UMR-TP07-1218-01	160-39298-14	Bismuth-212	10/2/2020	14.6				3.16	2.16		pCi/g
789UMR-TP07-1218-01	160-39298-14	Bismuth-214	10/2/2020	3.02				0.52	0.34		pCi/g
789UMR-TP07-1218-01	160-39298-14	Cesium-137	10/2/2020	0.0527	U		U	0.152	0.25		pCi/g
789UMR-TP07-1218-01	160-39298-14	Lead-212	10/2/2020	16.5				2.19	0.30		pCi/g
789UMR-TP07-1218-01	160-39298-14	Lead-214	10/2/2020	3.44				0.47	0.31		pCi/g
789UMR-TP07-1218-01	160-39298-14	Potassium-40	10/2/2020	16.2				2.56	0.75		pCi/g
789UMR-TP07-1218-01	160-39298-14	Protactinium-234	10/2/2020	0.316	U		U	0.581	1.6		pCi/g
789UMR-TP07-1218-01	160-39298-14	Radium-224	10/2/2020	16.5				2.19	0.30		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1218-01	160-39298-14	Radium-226	10/2/2020	3.02				0.52	0.34		pCi/g
789UMR-TP07-1218-01	160-39298-14	Radium-228	10/2/2020	14.1				1.65	0.41		pCi/g
789UMR-TP07-1218-01	160-39298-14	Thallium-208	10/2/2020	5.02				0.604	0.17		pCi/g
789UMR-TP07-1218-01	160-39298-14	Thorium-234	10/2/2020	0.816	U	UJ	UJ	0.564	10.6		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1824-01	160-39298-15	Thorium	9/29/2020	7.5		J	J		0.98	0.66	mg/Kg
789UMR-TP07-1824-01	160-39298-15	Thorium	9/29/2020	0.82		J	J		0.11	0.072	pCi/g
789UMR-TP07-1824-01	160-39298-15	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-1824-01	160-39298-15	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-1824-01	160-39298-15	U-235	9/30/2020	0.018	J	J	J		0.02	0.015	mg/Kg
789UMR-TP07-1824-01	160-39298-15	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-1824-01	160-39298-15	U-238	9/30/2020	2.4	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1824-01	160-39298-15	Thorium-228	10/30/2020	4.61				0.548	0.09		pCi/g
789UMR-TP07-1824-01	160-39298-15	Thorium-230	10/30/2020	2.41				0.347	0.07		pCi/g
789UMR-TP07-1824-01	160-39298-15	Thorium-232	10/30/2020	4.39				0.527	0.06		pCi/g
789UMR-TP07-1824-01	160-39298-15	Uranium-233/234	9/30/2020	1.61	F	J	J	0.265	0.02		pCi/g
789UMR-TP07-1824-01	160-39298-15	Uranium-235/236	9/30/2020	0.13				0.073	0.03		pCi/g
789UMR-TP07-1824-01	160-39298-15	Uranium-238	9/30/2020	1.75	F	J	J	0.279	0.02		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1824-01	160-39298-15	Actinium 228	10/2/2020	7.38				0.99	0.35		pCi/g
789UMR-TP07-1824-01	160-39298-15	Bismuth-212	10/2/2020	8.35				2.51	1.99		pCi/g
789UMR-TP07-1824-01	160-39298-15	Bismuth-214	10/2/2020	1.77				0.391	0.27		pCi/g
789UMR-TP07-1824-01	160-39298-15	Cesium-137	10/2/2020	0.0191	U		U	0.216	0.37		pCi/g
789UMR-TP07-1824-01	160-39298-15	Lead-212	10/2/2020	7.9				1.11	0.25		pCi/g
789UMR-TP07-1824-01	160-39298-15	Lead-214	10/2/2020	2.08				0.462	0.36		pCi/g
789UMR-TP07-1824-01	160-39298-15	Potassium-40	10/2/2020	16.6				3.14	1.22		pCi/g
789UMR-TP07-1824-01	160-39298-15	Protactinium-234	10/2/2020	-0.0753	U		U	0.233	1.24		pCi/g
789UMR-TP07-1824-01	160-39298-15	Radium-224	10/2/2020	7.9				1.11	0.25		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-1824-01	160-39298-15	Radium-226	10/2/2020	1.77				0.391	0.27		pCi/g
789UMR-TP07-1824-01	160-39298-15	Radium-228	10/2/2020	7.38				0.99	0.35		pCi/g
789UMR-TP07-1824-01	160-39298-15	Thallium-208	10/2/2020	2.5				0.376	0.14		pCi/g
789UMR-TP07-1824-01	160-39298-15	Thorium-234	10/2/2020	1.64	U	UJ	UJ	1.11	5.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-2428-01	160-39298-16	Thorium	9/29/2020	0.87		J	J		0.11	0.073	pCi/g
789UMR-TP07-2428-01	160-39298-16	Thorium	9/29/2020	7.9		J	J		0.98	0.66	mg/Kg
789UMR-TP07-2428-01	160-39298-16	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-2428-01	160-39298-16	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-2428-01	160-39298-16	U-235	9/30/2020	0.02	J	J	J		0.02	0.015	mg/Kg
789UMR-TP07-2428-01	160-39298-16	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP07-2428-01	160-39298-16	U-238	9/30/2020	2.5	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-2428-01	160-39298-16	Thorium-228	10/30/2020	6.51				0.708	0.09		pCi/g
789UMR-TP07-2428-01	160-39298-16	Thorium-230	10/30/2020	1.72				0.272	0.04		pCi/g
789UMR-TP07-2428-01	160-39298-16	Thorium-232	10/30/2020	5.75				0.64	0.02		pCi/g
789UMR-TP07-2428-01	160-39298-16	Uranium-233/234	9/30/2020	1.82	F	J	J	0.291	0.02		pCi/g
789UMR-TP07-2428-01	160-39298-16	Uranium-235/236	9/30/2020	0.071				0.0562	0.05		pCi/g
789UMR-TP07-2428-01	160-39298-16	Uranium-238	9/30/2020	1.83	F	J	J	0.292	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-2428-01	160-39298-16	Actinium 228	10/2/2020	7.39				0.958	0.46		pCi/g
789UMR-TP07-2428-01	160-39298-16	Bismuth-212	10/2/2020	7.79				1.9	1.66		pCi/g
789UMR-TP07-2428-01	160-39298-16	Bismuth-214	10/2/2020	2.22				0.45	0.32		pCi/g
789UMR-TP07-2428-01	160-39298-16	Cesium-137	10/2/2020	0.0921	U		U	0.17	0.28		pCi/g
789UMR-TP07-2428-01	160-39298-16	Lead-212	10/2/2020	8.28				0.956	0.24		pCi/g
789UMR-TP07-2428-01	160-39298-16	Lead-214	10/2/2020	2.15				0.431	0.35		pCi/g
789UMR-TP07-2428-01	160-39298-16	Potassium-40	10/2/2020	21				3.52	0.94		pCi/g
789UMR-TP07-2428-01	160-39298-16	Protactinium-234	10/2/2020	-0.274	U		U	0.897	1.49		pCi/g
789UMR-TP07-2428-01	160-39298-16	Radium-224	10/2/2020	8.28				0.956	0.24		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP07-2428-01	160-39298-16	Radium-226	10/2/2020	2.22				0.45	0.32		pCi/g
789UMR-TP07-2428-01	160-39298-16	Radium-228	10/2/2020	7.39				0.958	0.46		pCi/g
789UMR-TP07-2428-01	160-39298-16	Thallium-208	10/2/2020	2.6				0.387	0.19		pCi/g
789UMR-TP07-2428-01	160-39298-16	Thorium-234	10/2/2020	2.52	U	UJ	UJ	1.6	2.53		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0006-1	160-39298-17	Thorium	9/29/2020	6.5		J	J		1	0.71	mg/Kg
789UMR-TP08-0006-1	160-39298-17	Thorium	9/29/2020	0.72		J	J		0.12	0.078	pCi/g
789UMR-TP08-0006-1	160-39298-17	U-233	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP08-0006-1	160-39298-17	U-234	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP08-0006-1	160-39298-17	U-235	9/30/2020	0.021	J	J	J		0.03	0.016	mg/Kg
789UMR-TP08-0006-1	160-39298-17	U-236	9/30/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP08-0006-1	160-39298-17	U-238	9/30/2020	2.8	B				0.03	0.016	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0006-1	160-39298-17	Thorium-228	10/30/2020	2.38				0.341	0.07		pCi/g
789UMR-TP08-0006-1	160-39298-17	Thorium-230	10/30/2020	1.25				0.225	0.04		pCi/g
789UMR-TP08-0006-1	160-39298-17	Thorium-232	10/30/2020	2.53				0.354	0.06		pCi/g
789UMR-TP08-0006-1	160-39298-17	Uranium-233/234	9/30/2020	1.5	F	J	J	0.268	0.05		pCi/g
789UMR-TP08-0006-1	160-39298-17	Uranium-235/236	9/30/2020	0.126				0.0767	0.03		pCi/g
789UMR-TP08-0006-1	160-39298-17	Uranium-238	9/30/2020	1.39	F	J	J	0.255	0.05		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0006-1	160-39298-17	Actinium 228	10/2/2020	4.35				0.87	0.41		pCi/g
789UMR-TP08-0006-1	160-39298-17	Bismuth-212	10/2/2020	6.06				1.89	1.34		pCi/g
789UMR-TP08-0006-1	160-39298-17	Bismuth-214	10/2/2020	1.86				0.442	0.29		pCi/g
789UMR-TP08-0006-1	160-39298-17	Cesium-137	10/2/2020	0.0461	U		U	0.146	0.25		pCi/g
789UMR-TP08-0006-1	160-39298-17	Lead-212	10/2/2020	5.57				0.817	0.24		pCi/g
789UMR-TP08-0006-1	160-39298-17	Lead-214	10/2/2020	1.62				0.327	0.29		pCi/g
789UMR-TP08-0006-1	160-39298-17	Potassium-40	10/2/2020	18.5				3.45	1.32		pCi/g
789UMR-TP08-0006-1	160-39298-17	Protactinium-234	10/2/2020	0.265	U		U	0.409	1.01		pCi/g
789UMR-TP08-0006-1	160-39298-17	Radium-224	10/2/2020	5.57				0.817	0.24		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0006-1	160-39298-17	Radium-226	10/2/2020	1.86				0.442	0.29		pCi/g
789UMR-TP08-0006-1	160-39298-17	Radium-228	10/2/2020	4.35				0.87	0.41		pCi/g
789UMR-TP08-0006-1	160-39298-17	Thallium-208	10/2/2020	1.88				0.341	0.18		pCi/g
789UMR-TP08-0006-1	160-39298-17	Thorium-234	10/2/2020	0.967	U	UJ	UJ	1.37	2.25		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0612-01	160-39298-18	Thorium	10/6/2020	6.2					1	0.68	mg/Kg
789UMR-TP08-0612-01	160-39298-18	Thorium	10/6/2020	0.68					0.11	0.075	pCi/g
789UMR-TP08-0612-01	160-39298-18	U-233	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-0612-01	160-39298-18	U-234	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-0612-01	160-39298-18	U-235	10/8/2020	0.026	J	U	U		0.03	0.015	mg/Kg
789UMR-TP08-0612-01	160-39298-18	U-236	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-0612-01	160-39298-18	U-238	10/8/2020	3.2	B				0.03	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0612-01	160-39298-18	Thorium-228	10/30/2020	5.39				1.04	0.41		pCi/g
789UMR-TP08-0612-01	160-39298-18	Thorium-230	10/30/2020	2.14				0.613	0.24		pCi/g
789UMR-TP08-0612-01	160-39298-18	Thorium-232	10/30/2020	5.45				1.04	0.26		pCi/g
789UMR-TP08-0612-01	160-39298-18	Uranium-233/234	10/2/2020	1.37				0.237	0.06		pCi/g
789UMR-TP08-0612-01	160-39298-18	Uranium-235/236	10/2/2020	0.0554				0.0477	0.04		pCi/g
789UMR-TP08-0612-01	160-39298-18	Uranium-238	10/2/2020	1.47				0.246	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0612-01	160-39298-18	Actinium 228	10/2/2020	6.06				0.862	0.32		pCi/g
789UMR-TP08-0612-01	160-39298-18	Bismuth-212	10/2/2020	6.02				2.07	1.74		pCi/g
789UMR-TP08-0612-01	160-39298-18	Bismuth-214	10/2/2020	1.65				0.37	0.27		pCi/g
789UMR-TP08-0612-01	160-39298-18	Cesium-137	10/2/2020	0.0398	U		U	0.176	0.21		pCi/g
789UMR-TP08-0612-01	160-39298-18	Lead-212	10/2/2020	6.21				0.733	0.20		pCi/g
789UMR-TP08-0612-01	160-39298-18	Lead-214	10/2/2020	1.9				0.365	0.31		pCi/g
789UMR-TP08-0612-01	160-39298-18	Potassium-40	10/2/2020	16.8				2.97	0.88		pCi/g
789UMR-TP08-0612-01	160-39298-18	Protactinium-234	10/2/2020	0.196	U		U	0.681	1.34		pCi/g
789UMR-TP08-0612-01	160-39298-18	Radium-224	10/2/2020	6.21				0.733	0.20		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-0612-01	160-39298-18	Radium-226	10/2/2020	1.65				0.37	0.27		pCi/g
789UMR-TP08-0612-01	160-39298-18	Radium-228	10/2/2020	6.06				0.862	0.32		pCi/g
789UMR-TP08-0612-01	160-39298-18	Thallium-208	10/2/2020	1.85				0.303	0.16		pCi/g
789UMR-TP08-0612-01	160-39298-18	Thorium-234	10/2/2020	1.75	U	UJ	UJ	1.34	2.14		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-01	160-39298-19	Thorium	10/6/2020	0.74					0.11	0.074	pCi/g
789UMR-TP08-1218-01	160-39298-19	Thorium	10/6/2020	6.8					1	0.68	mg/Kg
789UMR-TP08-1218-01	160-39298-19	U-233	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-1218-01	160-39298-19	U-234	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-1218-01	160-39298-19	U-235	10/8/2020	0.02	J	U	U		0.03	0.015	mg/Kg
789UMR-TP08-1218-01	160-39298-19	U-236	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP08-1218-01	160-39298-19	U-238	10/8/2020	2.6	B				0.03	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-01	160-39298-19	Thorium-228	10/5/2020	3.01				0.422	0.14		pCi/g
789UMR-TP08-1218-01	160-39298-19	Thorium-230	10/5/2020	1.17	F	J	J	0.243	0.13		pCi/g
789UMR-TP08-1218-01	160-39298-19	Thorium-232	10/5/2020	2.83				0.397	0.06		pCi/g
789UMR-TP08-1218-01	160-39298-19	Uranium-233/234	10/2/2020	1.25				0.22	0.03		pCi/g
789UMR-TP08-1218-01	160-39298-19	Uranium-235/236	10/2/2020	0.0277				0.0321	0.02		pCi/g
789UMR-TP08-1218-01	160-39298-19	Uranium-238	10/2/2020	0.858				0.176	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-01	160-39298-19	Actinium 228	10/1/2020	3.49				0.559	0.16		pCi/g
789UMR-TP08-1218-01	160-39298-19	Bismuth-212	10/1/2020	6.62				1.88	1.24		pCi/g
789UMR-TP08-1218-01	160-39298-19	Bismuth-214	10/1/2020	1.2				0.287	0.24		pCi/g
789UMR-TP08-1218-01	160-39298-19	Cesium-137	10/1/2020	-0.0704	U		U	0.156	0.24		pCi/g
789UMR-TP08-1218-01	160-39298-19	Lead-212	10/1/2020	3.78				0.574	0.20		pCi/g
789UMR-TP08-1218-01	160-39298-19	Lead-214	10/1/2020	1.35				0.313	0.24		pCi/g
789UMR-TP08-1218-01	160-39298-19	Potassium-40	10/1/2020	15				3.6	2.66		pCi/g
789UMR-TP08-1218-01	160-39298-19	Protactinium-234	10/1/2020	0.0395	U		U	0.314	0.84		pCi/g
789UMR-TP08-1218-01	160-39298-19	Radium-224	10/1/2020	3.78				0.574	0.20		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-01	160-39298-19	Radium-226	10/1/2020	1.2				0.287	0.24		pCi/g
789UMR-TP08-1218-01	160-39298-19	Radium-228	10/1/2020	3.49				0.559	0.16		pCi/g
789UMR-TP08-1218-01	160-39298-19	Thallium-208	10/1/2020	1.21				0.23	0.12		pCi/g
789UMR-TP08-1218-01	160-39298-19	Thorium-234	10/1/2020	-0.937	U		U	1.38	3.69		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0612-01	160-39298-2	Thorium	9/29/2020	3.9		J	J		0.1	0.069	pCi/g
789UMR-TP05-0612-01	160-39298-2	Thorium	9/29/2020	35		J	J		0.94	0.63	mg/Kg
789UMR-TP05-0612-01	160-39298-2	U-233	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-0612-01	160-39298-2	U-234	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-0612-01	160-39298-2	U-235	9/30/2020	0.39		J	J		0.02	0.014	mg/Kg
789UMR-TP05-0612-01	160-39298-2	U-236	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-0612-01	160-39298-2	U-238	9/30/2020	51	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0612-01	160-39298-2	Thorium-228	10/28/2020	46.5				4.35	0.24		pCi/g
789UMR-TP05-0612-01	160-39298-2	Thorium-230	10/28/2020	9.93				1.22	0.16		pCi/g
789UMR-TP05-0612-01	160-39298-2	Thorium-232	10/28/2020	45.4				4.25	0.13		pCi/g
789UMR-TP05-0612-01	160-39298-2	Uranium-233/234	9/29/2020	37.1	F	J	J	3.57	0.16		pCi/g
789UMR-TP05-0612-01	160-39298-2	Uranium-235/236	9/29/2020	1.69				0.442	0.18		pCi/g
789UMR-TP05-0612-01	160-39298-2	Uranium-238	9/29/2020	38	F	J	J	3.64	0.14		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0612-01	160-39298-2	Actinium 228	10/2/2020	301				30.8	1.76		pCi/g
789UMR-TP05-0612-01	160-39298-2	Bismuth-212	10/2/2020	311				33.2	7.8		pCi/g
789UMR-TP05-0612-01	160-39298-2	Bismuth-214	10/2/2020	68.4				7.23	1.16		pCi/g
789UMR-TP05-0612-01	160-39298-2	Cesium-137	10/2/2020	-0.458	U		U	0.664	1.09		pCi/g
789UMR-TP05-0612-01	160-39298-2	Lead-212	10/2/2020	317				41.1	1.15		pCi/g
789UMR-TP05-0612-01	160-39298-2	Lead-214	10/2/2020	73.2				7.73	1.67		pCi/g
789UMR-TP05-0612-01	160-39298-2	Potassium-40	10/2/2020	2.14	U		U	4.81	7.96		pCi/g
789UMR-TP05-0612-01	160-39298-2	Protactinium-234	10/2/2020	1.04	U		U	0.933	6.22		pCi/g
789UMR-TP05-0612-01	160-39298-2	Radium-224	10/2/2020	317				41.1	1.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-0612-01	160-39298-2	Radium-226	10/2/2020	68.4	G			7.23	1.16		pCi/g
789UMR-TP05-0612-01	160-39298-2	Radium-228	10/2/2020	301				30.8	1.76		pCi/g
789UMR-TP05-0612-01	160-39298-2	Thallium-208	10/2/2020	104				10.9	0.61		pCi/g
789UMR-TP05-0612-01	160-39298-2	Thorium-234	10/2/2020	16.9	U	UJ	UJ	4.37	28		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-02	160-39298-20	Thorium	10/6/2020	5.6					0.94	0.64	mg/Kg
789UMR-TP08-1218-02	160-39298-20	Thorium	10/6/2020	0.61					0.1	0.07	pCi/g
789UMR-TP08-1218-02	160-39298-20	U-233	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-1218-02	160-39298-20	U-234	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-1218-02	160-39298-20	U-235	10/8/2020	0.02	J	U	U		0.02	0.014	mg/Kg
789UMR-TP08-1218-02	160-39298-20	U-236	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-1218-02	160-39298-20	U-238	10/8/2020	2.8	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-02	160-39298-20	Thorium-228	10/5/2020	3.06				0.396	0.11		pCi/g
789UMR-TP08-1218-02	160-39298-20	Thorium-230	10/5/2020	0.998		J	J	0.205	0.12		pCi/g
789UMR-TP08-1218-02	160-39298-20	Thorium-232	10/5/2020	2.89				0.378	0.09		pCi/g
789UMR-TP08-1218-02	160-39298-20	Uranium-233/234	9/28/2020	1.21				0.218	0.03		pCi/g
789UMR-TP08-1218-02	160-39298-20	Uranium-235/236	9/28/2020	0.0837				0.058	0.04		pCi/g
789UMR-TP08-1218-02	160-39298-20	Uranium-238	9/28/2020	1.17				0.214	0.05		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-02	160-39298-20	Actinium 228	10/1/2020	3.18				0.497	0.26		pCi/g
789UMR-TP08-1218-02	160-39298-20	Bismuth-212	10/1/2020	0.752	U		U	1.11	1.84		pCi/g
789UMR-TP08-1218-02	160-39298-20	Bismuth-214	10/1/2020	1.25				0.261	0.17		pCi/g
789UMR-TP08-1218-02	160-39298-20	Cesium-137	10/1/2020	0.00336	U		U	0.0957	0.16		pCi/g
789UMR-TP08-1218-02	160-39298-20	Lead-212	10/1/2020	2.91				0.434	0.16		pCi/g
789UMR-TP08-1218-02	160-39298-20	Lead-214	10/1/2020	1.19				0.211	0.18		pCi/g
789UMR-TP08-1218-02	160-39298-20	Potassium-40	10/1/2020	16.2				2.57	0.99		pCi/g
789UMR-TP08-1218-02	160-39298-20	Protactinium-234	10/1/2020	0.163	U		U	0.468	0.74		pCi/g
789UMR-TP08-1218-02	160-39298-20	Radium-224	10/1/2020	2.91				0.434	0.16		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1218-02	160-39298-20	Radium-226	10/1/2020	1.25				0.261	0.17		pCi/g
789UMR-TP08-1218-02	160-39298-20	Radium-228	10/1/2020	3.18				0.497	0.26		pCi/g
789UMR-TP08-1218-02	160-39298-20	Thallium-208	10/1/2020	1.07				0.173	0.07		pCi/g
789UMR-TP08-1218-02	160-39298-20	Thorium-234	10/1/2020	0.928	U		U	0.948	1.39		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1824-01	160-39298-21	Thorium	10/6/2020	5					0.97	0.66	mg/Kg
789UMR-TP08-1824-01	160-39298-21	Thorium	10/6/2020	0.55					0.11	0.072	pCi/g
789UMR-TP08-1824-01	160-39298-21	U-233	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP08-1824-01	160-39298-21	U-234	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP08-1824-01	160-39298-21	U-235	10/8/2020	0.018	J	U	U		0.02	0.015	mg/Kg
789UMR-TP08-1824-01	160-39298-21	U-236	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP08-1824-01	160-39298-21	U-238	10/8/2020	2.4	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1824-01	160-39298-21	Thorium-228	10/5/2020	3.64				0.462	0.12		pCi/g
789UMR-TP08-1824-01	160-39298-21	Thorium-230	10/5/2020	1.51		J	J	0.266	0.13		pCi/g
789UMR-TP08-1824-01	160-39298-21	Thorium-232	10/5/2020	3.49				0.443	0.07		pCi/g
789UMR-TP08-1824-01	160-39298-21	Uranium-233/234	9/28/2020	0.961				0.192	0.04		pCi/g
789UMR-TP08-1824-01	160-39298-21	Uranium-235/236	9/28/2020	0.0197	U		U	0.0279	0.02		pCi/g
789UMR-TP08-1824-01	160-39298-21	Uranium-238	9/28/2020	1.01				0.198	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1824-01	160-39298-21	Actinium 228	10/1/2020	3.24				0.552	0.19		pCi/g
789UMR-TP08-1824-01	160-39298-21	Bismuth-212	10/1/2020	4.17				1.26	0.61		pCi/g
789UMR-TP08-1824-01	160-39298-21	Bismuth-214	10/1/2020	1.18				0.328	0.25		pCi/g
789UMR-TP08-1824-01	160-39298-21	Cesium-137	10/1/2020	-0.0337	U		U	0.183	0.25		pCi/g
789UMR-TP08-1824-01	160-39298-21	Lead-212	10/1/2020	3.2				0.503	0.16		pCi/g
789UMR-TP08-1824-01	160-39298-21	Lead-214	10/1/2020	1.42				0.341	0.25		pCi/g
789UMR-TP08-1824-01	160-39298-21	Potassium-40	10/1/2020	16.7				3.23	1.31		pCi/g
789UMR-TP08-1824-01	160-39298-21	Protactinium-234	10/1/2020	-0.098	U		U	0.251	0.90		pCi/g
789UMR-TP08-1824-01	160-39298-21	Radium-224	10/1/2020	3.2				0.503	0.16		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-1824-01	160-39298-21	Radium-226	10/1/2020	1.18				0.328	0.25		pCi/g
789UMR-TP08-1824-01	160-39298-21	Radium-228	10/1/2020	3.24				0.552	0.19		pCi/g
789UMR-TP08-1824-01	160-39298-21	Thallium-208	10/1/2020	1.22				0.244	0.13		pCi/g
789UMR-TP08-1824-01	160-39298-21	Thorium-234	10/1/2020	1.32	U		U	1.09	2.02		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-3032-01	160-39298-22	Thorium	10/6/2020	14					0.91	0.61	mg/Kg
789UMR-TP08-3032-01	160-39298-22	Thorium	10/6/2020	1.6					0.09	0.067	pCi/g
789UMR-TP08-3032-01	160-39298-22	U-233	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-3032-01	160-39298-22	U-234	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-3032-01	160-39298-22	U-235	10/8/2020	0.077					0.02	0.014	mg/Kg
789UMR-TP08-3032-01	160-39298-22	U-236	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP08-3032-01	160-39298-22	U-238	10/8/2020	9.8	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-3032-01	160-39298-22	Thorium-228	10/16/2020	12.7				2.19	0.64		pCi/g
789UMR-TP08-3032-01	160-39298-22	Thorium-230	10/16/2020	3.81				1.1	0.50		pCi/g
789UMR-TP08-3032-01	160-39298-22	Thorium-232	10/16/2020	10.7				1.96	0.47		pCi/g
789UMR-TP08-3032-01	160-39298-22	Uranium-233/234	9/28/2020	6.67				0.74	0.04		pCi/g
789UMR-TP08-3032-01	160-39298-22	Uranium-235/236	9/28/2020	0.324				0.123	0.05		pCi/g
789UMR-TP08-3032-01	160-39298-22	Uranium-238	9/28/2020	6.58				0.732	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-3032-01	160-39298-22	Actinium 228	10/1/2020	59.1				6.15	1.02		pCi/g
789UMR-TP08-3032-01	160-39298-22	Bismuth-212	10/1/2020	57.1				6.98	3.7		pCi/g
789UMR-TP08-3032-01	160-39298-22	Bismuth-214	10/1/2020	12				1.53	0.68		pCi/g
789UMR-TP08-3032-01	160-39298-22	Cesium-137	10/1/2020	-0.225	U		U	0.325	0.53		pCi/g
789UMR-TP08-3032-01	160-39298-22	Lead-212	10/1/2020	68.1				8.86	0.53		pCi/g
789UMR-TP08-3032-01	160-39298-22	Lead-214	10/1/2020	12.9				1.47	0.67		pCi/g
789UMR-TP08-3032-01	160-39298-22	Potassium-40	10/1/2020	22.4				3.9	2.29		pCi/g
789UMR-TP08-3032-01	160-39298-22	Protactinium-234	10/1/2020	0.821	U		U	0.659	1.21		pCi/g
789UMR-TP08-3032-01	160-39298-22	Radium-224	10/1/2020	68.1				8.86	0.53		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP08-3032-01	160-39298-22	Radium-226	10/1/2020	12				1.53	0.68		pCi/g
789UMR-TP08-3032-01	160-39298-22	Radium-228	10/1/2020	59.1				6.15	1.02		pCi/g
789UMR-TP08-3032-01	160-39298-22	Thallium-208	10/1/2020	20.8				2.27	0.43		pCi/g
789UMR-TP08-3032-01	160-39298-22	Thorium-234	10/1/2020	0.296	U		U	0.627	20.4		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0006-01	160-39298-23	Thorium	10/6/2020	6.4					0.94	0.63	mg/Kg
789UMR-TP09-0006-01	160-39298-23	Thorium	10/6/2020	0.71					0.1	0.069	pCi/g
789UMR-TP09-0006-01	160-39298-23	U-233	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP09-0006-01	160-39298-23	U-234	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP09-0006-01	160-39298-23	U-235	10/8/2020	0.016	J	U	U		0.02	0.014	mg/Kg
789UMR-TP09-0006-01	160-39298-23	U-236	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP09-0006-01	160-39298-23	U-238	10/8/2020	2.6	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0006-01	160-39298-23	Thorium-228	10/6/2020	0.991				0.212	0.12		pCi/g
789UMR-TP09-0006-01	160-39298-23	Thorium-230	10/6/2020	1.12		J	J	0.23	0.12		pCi/g
789UMR-TP09-0006-01	160-39298-23	Thorium-232	10/6/2020	1.02				0.205	0.05		pCi/g
789UMR-TP09-0006-01	160-39298-23	Uranium-233/234	9/28/2020	0.796				0.169	0.04		pCi/g
789UMR-TP09-0006-01	160-39298-23	Uranium-235/236	9/28/2020	0.0422	U		U	0.0426	0.05		pCi/g
789UMR-TP09-0006-01	160-39298-23	Uranium-238	9/28/2020	0.811				0.171	0.03		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0006-01	160-39298-23	Actinium 228	10/1/2020	1.55				0.341	0.11		pCi/g
789UMR-TP09-0006-01	160-39298-23	Bismuth-212	10/1/2020	0.134	U		U	1.11	1.94		pCi/g
789UMR-TP09-0006-01	160-39298-23	Bismuth-214	10/1/2020	0.859				0.229	0.18		pCi/g
789UMR-TP09-0006-01	160-39298-23	Cesium-137	10/1/2020	0.059	U		U	0.0964	0.16		pCi/g
789UMR-TP09-0006-01	160-39298-23	Lead-212	10/1/2020	1.24				0.226	0.13		pCi/g
789UMR-TP09-0006-01	160-39298-23	Lead-214	10/1/2020	0.962				0.187	0.16		pCi/g
789UMR-TP09-0006-01	160-39298-23	Potassium-40	10/1/2020	17.3				2.76	0.96		pCi/g
789UMR-TP09-0006-01	160-39298-23	Protactinium-234	10/1/2020	-0.0274	U		U	0.0633	0.72		pCi/g
789UMR-TP09-0006-01	160-39298-23	Radium-224	10/1/2020	1.24				0.226	0.13		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0006-01	160-39298-23	Radium-226	10/1/2020	0.859				0.229	0.18		pCi/g
789UMR-TP09-0006-01	160-39298-23	Radium-228	10/1/2020	1.55				0.341	0.11		pCi/g
789UMR-TP09-0006-01	160-39298-23	Thallium-208	10/1/2020	0.49		U	U	0.119	0.08		pCi/g
789UMR-TP09-0006-01	160-39298-23	Thorium-234	10/1/2020	0.54	U		U	1.29	3.07		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0612-01	160-39298-24	Thorium	10/6/2020	0.72					0.11	0.072	pCi/g
789UMR-TP09-0612-01	160-39298-24	Thorium	10/6/2020	6.5					0.97	0.66	mg/Kg
789UMR-TP09-0612-01	160-39298-24	U-233	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-0612-01	160-39298-24	U-234	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-0612-01	160-39298-24	U-235	10/8/2020	0.018	J	U	U		0.02	0.015	mg/Kg
789UMR-TP09-0612-01	160-39298-24	U-236	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-0612-01	160-39298-24	U-238	10/8/2020	2.5	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0612-01	160-39298-24	Thorium-228	10/6/2020	0.912				0.264	0.20		pCi/g
789UMR-TP09-0612-01	160-39298-24	Thorium-230	10/6/2020	1.02		J	J	0.277	0.17		pCi/g
789UMR-TP09-0612-01	160-39298-24	Thorium-232	10/6/2020	0.891				0.241	0.11		pCi/g
789UMR-TP09-0612-01	160-39298-24	Uranium-233/234	9/28/2020	0.846				0.171	0.02		pCi/g
789UMR-TP09-0612-01	160-39298-24	Uranium-235/236	9/28/2020	0.0268				0.031	0.02		pCi/g
789UMR-TP09-0612-01	160-39298-24	Uranium-238	9/28/2020	0.909				0.178	0.02		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0612-01	160-39298-24	Actinium 228	10/1/2020	1.24				0.429	0.54		pCi/g
789UMR-TP09-0612-01	160-39298-24	Bismuth-212	10/1/2020	-0.529	U		U	1.58	2.73		pCi/g
789UMR-TP09-0612-01	160-39298-24	Bismuth-214	10/1/2020	0.802				0.292	0.25		pCi/g
789UMR-TP09-0612-01	160-39298-24	Cesium-137	10/1/2020	0.0231	U		U	0.11	0.19		pCi/g
789UMR-TP09-0612-01	160-39298-24	Lead-212	10/1/2020	0.88				0.21	0.18		pCi/g
789UMR-TP09-0612-01	160-39298-24	Lead-214	10/1/2020	0.792				0.201	0.21		pCi/g
789UMR-TP09-0612-01	160-39298-24	Potassium-40	10/1/2020	14.9				3.04	1.34		pCi/g
789UMR-TP09-0612-01	160-39298-24	Protactinium-234	10/1/2020	0.104	U		U	0.141	0.69		pCi/g
789UMR-TP09-0612-01	160-39298-24	Radium-224	10/1/2020	0.88				0.21	0.18		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-0612-01	160-39298-24	Radium-226	10/1/2020	0.802				0.292	0.25		pCi/g
789UMR-TP09-0612-01	160-39298-24	Radium-228	10/1/2020	1.24				0.429	0.54		pCi/g
789UMR-TP09-0612-01	160-39298-24	Thallium-208	10/1/2020	0.327		U	U	0.11	0.08		pCi/g
789UMR-TP09-0612-01	160-39298-24	Thorium-234	10/1/2020	0.448	U		U	0.539	2.81		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1218-01	160-39298-25	Thorium	10/6/2020	6.5					0.97	0.66	mg/Kg
789UMR-TP09-1218-01	160-39298-25	Thorium	10/6/2020	0.71					0.11	0.072	pCi/g
789UMR-TP09-1218-01	160-39298-25	U-233	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-1218-01	160-39298-25	U-234	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-1218-01	160-39298-25	U-235	10/8/2020	0.021	J	U	U		0.02	0.015	mg/Kg
789UMR-TP09-1218-01	160-39298-25	U-236	10/8/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP09-1218-01	160-39298-25	U-238	10/8/2020	2.7	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1218-01	160-39298-25	Thorium-228	10/6/2020	1.14				0.242	0.14		pCi/g
789UMR-TP09-1218-01	160-39298-25	Thorium-230	10/6/2020	1.11		J	J	0.243	0.14		pCi/g
789UMR-TP09-1218-01	160-39298-25	Thorium-232	10/6/2020	1.28				0.246	0.08		pCi/g
789UMR-TP09-1218-01	160-39298-25	Uranium-233/234	9/28/2020	1.03				0.202	0.02		pCi/g
789UMR-TP09-1218-01	160-39298-25	Uranium-235/236	9/28/2020	0.0201	U		U	0.0285	0.03		pCi/g
789UMR-TP09-1218-01	160-39298-25	Uranium-238	9/28/2020	0.844				0.18	0.03		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1218-01	160-39298-25	Actinium 228	10/1/2020	1.18				0.255	0.08		pCi/g
789UMR-TP09-1218-01	160-39298-25	Bismuth-212	10/1/2020	0.254	U		U	0.786	1.36		pCi/g
789UMR-TP09-1218-01	160-39298-25	Bismuth-214	10/1/2020	0.769				0.173	0.11		pCi/g
789UMR-TP09-1218-01	160-39298-25	Cesium-137	10/1/2020	-0.00644	U		U	0.0919	0.15		pCi/g
789UMR-TP09-1218-01	160-39298-25	Lead-212	10/1/2020	1.02				0.179	0.09		pCi/g
789UMR-TP09-1218-01	160-39298-25	Lead-214	10/1/2020	0.725				0.144	0.12		pCi/g
789UMR-TP09-1218-01	160-39298-25	Potassium-40	10/1/2020	15.1				2.3	0.35		pCi/g
789UMR-TP09-1218-01	160-39298-25	Protactinium-234	10/1/2020	0.102	U		U	0.186	0.55		pCi/g
789UMR-TP09-1218-01	160-39298-25	Radium-224	10/1/2020	1.02				0.179	0.09		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1218-01	160-39298-25	Radium-226	10/1/2020	0.769				0.173	0.11		pCi/g
789UMR-TP09-1218-01	160-39298-25	Radium-228	10/1/2020	1.18				0.255	0.08		pCi/g
789UMR-TP09-1218-01	160-39298-25	Thallium-208	10/1/2020	0.254		U	U	0.101	0.09		pCi/g
789UMR-TP09-1218-01	160-39298-25	Thorium-234	10/1/2020	0.361	U		U	0.757	3.26		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1824-01	160-39298-26	Thorium	10/6/2020	6.6					1.1	0.71	mg/Kg
789UMR-TP09-1824-01	160-39298-26	Thorium	10/6/2020	0.72					0.12	0.078	pCi/g
789UMR-TP09-1824-01	160-39298-26	U-233	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP09-1824-01	160-39298-26	U-234	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP09-1824-01	160-39298-26	U-235	10/8/2020	0.027	J	U	U		0.03	0.016	mg/Kg
789UMR-TP09-1824-01	160-39298-26	U-236	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP09-1824-01	160-39298-26	U-238	10/8/2020	3.3	B				0.03	0.016	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1824-01	160-39298-26	Thorium-228	10/6/2020	2.7				0.372	0.10		pCi/g
789UMR-TP09-1824-01	160-39298-26	Thorium-230	10/6/2020	1.41		J	J	0.253	0.11		pCi/g
789UMR-TP09-1824-01	160-39298-26	Thorium-232	10/6/2020	2.84				0.381	0.05		pCi/g
789UMR-TP09-1824-01	160-39298-26	Uranium-233/234	9/28/2020	1.13				0.208	0.05		pCi/g
789UMR-TP09-1824-01	160-39298-26	Uranium-235/236	9/28/2020	0.0373				0.0374	0.02		pCi/g
789UMR-TP09-1824-01	160-39298-26	Uranium-238	9/28/2020	1.24				0.22	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1824-01	160-39298-26	Actinium 228	10/1/2020	2.38				0.401	0.21		pCi/g
789UMR-TP09-1824-01	160-39298-26	Bismuth-212	10/1/2020	2.73				1.08	0.94		pCi/g
789UMR-TP09-1824-01	160-39298-26	Bismuth-214	10/1/2020	0.381	U		U	0.126	0.45		pCi/g
789UMR-TP09-1824-01	160-39298-26	Cesium-137	10/1/2020	-0.011	U		U	0.0946	0.16		pCi/g
789UMR-TP09-1824-01	160-39298-26	Lead-212	10/1/2020	2.51				0.379	0.14		pCi/g
789UMR-TP09-1824-01	160-39298-26	Lead-214	10/1/2020	1.25				0.232	0.15		pCi/g
789UMR-TP09-1824-01	160-39298-26	Potassium-40	10/1/2020	15.9				2.43	0.77		pCi/g
789UMR-TP09-1824-01	160-39298-26	Protactinium-234	10/1/2020	0.0243	U		U	0.0459	0.79		pCi/g
789UMR-TP09-1824-01	160-39298-26	Radium-224	10/1/2020	2.51				0.379	0.14		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP09-1824-01	160-39298-26	Radium-226	10/1/2020	0.381	U		U	0.126	0.45		pCi/g
789UMR-TP09-1824-01	160-39298-26	Radium-228	10/1/2020	2.38				0.401	0.21		pCi/g
789UMR-TP09-1824-01	160-39298-26	Thallium-208	10/1/2020	0.688				0.133	0.08		pCi/g
789UMR-TP09-1824-01	160-39298-26	Thorium-234	10/1/2020	0.459	U		U	1.59	3.37		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0006-01	160-39298-27	Thorium	10/6/2020	7.2					1.1	0.73	mg/Kg
789UMR-TP10-0006-01	160-39298-27	Thorium	10/6/2020	0.79					0.12	0.08	pCi/g
789UMR-TP10-0006-01	160-39298-27	U-233	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP10-0006-01	160-39298-27	U-234	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP10-0006-01	160-39298-27	U-235	10/8/2020	0.023	J	U	U		0.03	0.016	mg/Kg
789UMR-TP10-0006-01	160-39298-27	U-236	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP10-0006-01	160-39298-27	U-238	10/8/2020	2.7	B				0.03	0.016	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0006-01	160-39298-27	Thorium-228	10/6/2020	2.65				0.381	0.10		pCi/g
789UMR-TP10-0006-01	160-39298-27	Thorium-230	10/6/2020	1.64		J	J	0.288	0.12		pCi/g
789UMR-TP10-0006-01	160-39298-27	Thorium-232	10/6/2020	2.39				0.351	0.06		pCi/g
789UMR-TP10-0006-01	160-39298-27	Uranium-233/234	9/28/2020	0.997				0.198	0.05		pCi/g
789UMR-TP10-0006-01	160-39298-27	Uranium-235/236	9/28/2020	0.0274	U		U	0.0349	0.04		pCi/g
789UMR-TP10-0006-01	160-39298-27	Uranium-238	9/28/2020	1.12				0.212	0.04		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0006-01	160-39298-27	Actinium 228	10/1/2020	2.65				0.533	0.21		pCi/g
789UMR-TP10-0006-01	160-39298-27	Bismuth-212	10/1/2020	3.61				1.27	0.84		pCi/g
789UMR-TP10-0006-01	160-39298-27	Bismuth-214	10/1/2020	0.916				0.29	0.30		pCi/g
789UMR-TP10-0006-01	160-39298-27	Cesium-137	10/1/2020	0.0344	U		U	0.14	0.24		pCi/g
789UMR-TP10-0006-01	160-39298-27	Lead-212	10/1/2020	2.5				0.429	0.22		pCi/g
789UMR-TP10-0006-01	160-39298-27	Lead-214	10/1/2020	1.23				0.299	0.28		pCi/g
789UMR-TP10-0006-01	160-39298-27	Potassium-40	10/1/2020	17.7				3.48	1.45		pCi/g
789UMR-TP10-0006-01	160-39298-27	Protactinium-234	10/1/2020	-0.0616	U		U	0.158	0.94		pCi/g
789UMR-TP10-0006-01	160-39298-27	Radium-224	10/1/2020	2.5				0.429	0.22		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0006-01	160-39298-27	Radium-226	10/1/2020	0.916				0.29	0.30		pCi/g
789UMR-TP10-0006-01	160-39298-27	Radium-228	10/1/2020	2.65				0.533	0.21		pCi/g
789UMR-TP10-0006-01	160-39298-27	Thallium-208	10/1/2020	0.81				0.182	0.09		pCi/g
789UMR-TP10-0006-01	160-39298-27	Thorium-234	10/1/2020	1.19	U		U	1.02	1.91		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0612-01	160-39298-28	Thorium	10/6/2020	0.72					0.12	0.08	pCi/g
789UMR-TP10-0612-01	160-39298-28	Thorium	10/6/2020	6.6					1.1	0.73	mg/Kg
789UMR-TP10-0612-01	160-39298-28	U-233	10/8/2020	0.016	^				0.03	0.016	mg/Kg
789UMR-TP10-0612-01	160-39298-28	U-234	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP10-0612-01	160-39298-28	U-235	10/8/2020	0.027	J	U	U		0.03	0.016	mg/Kg
789UMR-TP10-0612-01	160-39298-28	U-236	10/8/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP10-0612-01	160-39298-28	U-238	10/8/2020	3	B				0.03	0.016	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0612-01	160-39298-28	Thorium-228	10/6/2020	4.56				0.549	0.10		pCi/g
789UMR-TP10-0612-01	160-39298-28	Thorium-230	10/6/2020	1.74		J	J	0.292	0.12		pCi/g
789UMR-TP10-0612-01	160-39298-28	Thorium-232	10/6/2020	4.37				0.528	0.06		pCi/g
789UMR-TP10-0612-01	160-39298-28	Uranium-233/234	9/28/2020	1.37				0.239	0.04		pCi/g
789UMR-TP10-0612-01	160-39298-28	Uranium-235/236	9/28/2020	0.109				0.0664	0.02		pCi/g
789UMR-TP10-0612-01	160-39298-28	Uranium-238	9/28/2020	1.38				0.24	0.02		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0612-01	160-39298-28	Actinium 228	10/1/2020	3.86				0.563	0.27		pCi/g
789UMR-TP10-0612-01	160-39298-28	Bismuth-212	10/1/2020	6.13				1.6	1.12		pCi/g
789UMR-TP10-0612-01	160-39298-28	Bismuth-214	10/1/2020	1.37				0.32	0.24		pCi/g
789UMR-TP10-0612-01	160-39298-28	Cesium-137	10/1/2020	0.061	U		U	0.0917	0.15		pCi/g
789UMR-TP10-0612-01	160-39298-28	Lead-212	10/1/2020	4.25				0.607	0.17		pCi/g
789UMR-TP10-0612-01	160-39298-28	Lead-214	10/1/2020	1.56				0.26	0.18		pCi/g
789UMR-TP10-0612-01	160-39298-28	Potassium-40	10/1/2020	16.7				2.53	0.38		pCi/g
789UMR-TP10-0612-01	160-39298-28	Protactinium-234	10/1/2020	-0.000613	U		U	0.00161	0.99		pCi/g
789UMR-TP10-0612-01	160-39298-28	Radium-224	10/1/2020	4.25				0.607	0.17		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-0612-01	160-39298-28	Radium-226	10/1/2020	1.37				0.32	0.24		pCi/g
789UMR-TP10-0612-01	160-39298-28	Radium-228	10/1/2020	3.86				0.563	0.27		pCi/g
789UMR-TP10-0612-01	160-39298-28	Thallium-208	10/1/2020	1.44				0.224	0.10		pCi/g
789UMR-TP10-0612-01	160-39298-28	Thorium-234	10/1/2020	-0.848	U		U	2.89	4.79		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1218-01	160-39298-29	Thorium	10/6/2020	6.3					0.99	0.67	mg/Kg
789UMR-TP10-1218-01	160-39298-29	Thorium	10/6/2020	0.69					0.11	0.073	pCi/g
789UMR-TP10-1218-01	160-39298-29	U-233	10/8/2020	0.015	^				0.03	0.015	mg/Kg
789UMR-TP10-1218-01	160-39298-29	U-234	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP10-1218-01	160-39298-29	U-235	10/8/2020	0.019	J	U	U		0.03	0.015	mg/Kg
789UMR-TP10-1218-01	160-39298-29	U-236	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP10-1218-01	160-39298-29	U-238	10/8/2020	2.6	B				0.03	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1218-01	160-39298-29	Thorium-228	10/6/2020	1.85				0.301	0.10		pCi/g
789UMR-TP10-1218-01	160-39298-29	Thorium-230	10/6/2020	1.11		J	J	0.229	0.12		pCi/g
789UMR-TP10-1218-01	160-39298-29	Thorium-232	10/6/2020	1.8				0.29	0.05		pCi/g
789UMR-TP10-1218-01	160-39298-29	Uranium-233/234	9/28/2020	0.993				0.199	0.05		pCi/g
789UMR-TP10-1218-01	160-39298-29	Uranium-235/236	9/28/2020	0.0891				0.0618	0.04		pCi/g
789UMR-TP10-1218-01	160-39298-29	Uranium-238	9/28/2020	0.742				0.168	0.03		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1218-01	160-39298-29	Actinium 228	10/1/2020	2.3				0.365	0.09		pCi/g
789UMR-TP10-1218-01	160-39298-29	Bismuth-212	10/1/2020	3.16				0.967	0.67		pCi/g
789UMR-TP10-1218-01	160-39298-29	Bismuth-214	10/1/2020	0.996				0.286	0.21		pCi/g
789UMR-TP10-1218-01	160-39298-29	Cesium-137	10/1/2020	0.0556	U		U	0.0954	0.15		pCi/g
789UMR-TP10-1218-01	160-39298-29	Lead-212	10/1/2020	2.34				0.361	0.15		pCi/g
789UMR-TP10-1218-01	160-39298-29	Lead-214	10/1/2020	1.12				0.196	0.15		pCi/g
789UMR-TP10-1218-01	160-39298-29	Potassium-40	10/1/2020	15.7				2.44	0.80		pCi/g
789UMR-TP10-1218-01	160-39298-29	Protactinium-234	10/1/2020	-0.00743	U		U	0.0142	0.77		pCi/g
789UMR-TP10-1218-01	160-39298-29	Radium-224	10/1/2020	2.34				0.361	0.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1218-01	160-39298-29	Radium-226	10/1/2020	0.996				0.286	0.21		pCi/g
789UMR-TP10-1218-01	160-39298-29	Radium-228	10/1/2020	2.3				0.365	0.09		pCi/g
789UMR-TP10-1218-01	160-39298-29	Thallium-208	10/1/2020	0.769				0.14	0.07		pCi/g
789UMR-TP10-1218-01	160-39298-29	Thorium-234	10/1/2020	-0.601	U		U	2.13	3.55		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1218-01	160-39298-3	Thorium	9/29/2020	38		J	J		0.93	0.63	mg/Kg
789UMR-TP05-1218-01	160-39298-3	Thorium	9/29/2020	4.2		J	J		0.1	0.069	pCi/g
789UMR-TP05-1218-01	160-39298-3	U-233	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-1218-01	160-39298-3	U-234	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-1218-01	160-39298-3	U-235	9/30/2020	0.48		J	J		0.02	0.014	mg/Kg
789UMR-TP05-1218-01	160-39298-3	U-236	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-1218-01	160-39298-3	U-238	9/30/2020	62	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1218-01	160-39298-3	Thorium-228	10/29/2020	55.5				5.48	0.42		pCi/g
789UMR-TP05-1218-01	160-39298-3	Thorium-230	10/29/2020	10.4				1.52	0.11		pCi/g
789UMR-TP05-1218-01	160-39298-3	Thorium-232	10/29/2020	55.6				5.48	0.11		pCi/g
789UMR-TP05-1218-01	160-39298-3	Uranium-233/234	9/29/2020	29.3	F	J	J	2.83	0.14		pCi/g
789UMR-TP05-1218-01	160-39298-3	Uranium-235/236	9/29/2020	1.53				0.381	0.14		pCi/g
789UMR-TP05-1218-01	160-39298-3	Uranium-238	9/29/2020	28.8	F	J	J	2.78	0.12		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1218-01	160-39298-3	Actinium 228	10/2/2020	203				20.8	1.79		pCi/g
789UMR-TP05-1218-01	160-39298-3	Bismuth-212	10/2/2020	208				22.7	6.64		pCi/g
789UMR-TP05-1218-01	160-39298-3	Bismuth-214	10/2/2020	42.8				4.6	1.03		pCi/g
789UMR-TP05-1218-01	160-39298-3	Cesium-137	10/2/2020	0.312	U		U	0.576	0.95		pCi/g
789UMR-TP05-1218-01	160-39298-3	Lead-212	10/2/2020	225				29.2	0.99		pCi/g
789UMR-TP05-1218-01	160-39298-3	Lead-214	10/2/2020	46				4.92	1.33		pCi/g
789UMR-TP05-1218-01	160-39298-3	Potassium-40	10/2/2020	34.7				6.44	4.26		pCi/g
789UMR-TP05-1218-01	160-39298-3	Protactinium-234	10/2/2020	-0.156	U		U	0.331	5.61		pCi/g
789UMR-TP05-1218-01	160-39298-3	Radium-224	10/2/2020	225				29.2	0.99		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1218-01	160-39298-3	Radium-226	10/2/2020	42.8	G			4.6	1.03		pCi/g
789UMR-TP05-1218-01	160-39298-3	Radium-228	10/2/2020	203				20.8	1.79		pCi/g
789UMR-TP05-1218-01	160-39298-3	Thallium-208	10/2/2020	70.3				7.38	0.67		pCi/g
789UMR-TP05-1218-01	160-39298-3	Thorium-234	10/2/2020	18.3	U	UJ	UJ	4.17	33		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1824-01	160-39298-30	Thorium	10/6/2020	6.5					1	0.68	mg/Kg
789UMR-TP10-1824-01	160-39298-30	Thorium	10/6/2020	0.71					0.11	0.075	pCi/g
789UMR-TP10-1824-01	160-39298-30	U-233	10/8/2020	0.015	^				0.03	0.015	mg/Kg
789UMR-TP10-1824-01	160-39298-30	U-234	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP10-1824-01	160-39298-30	U-235	10/8/2020	0.02	J	U	U		0.03	0.015	mg/Kg
789UMR-TP10-1824-01	160-39298-30	U-236	10/8/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP10-1824-01	160-39298-30	U-238	10/8/2020	2.7	B				0.03	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1824-01	160-39298-30	Thorium-228	10/6/2020	1.84				0.292	0.10		pCi/g
789UMR-TP10-1824-01	160-39298-30	Thorium-230	10/6/2020	0.953		J	J	0.206	0.11		pCi/g
789UMR-TP10-1824-01	160-39298-30	Thorium-232	10/6/2020	1.69				0.271	0.05		pCi/g
789UMR-TP10-1824-01	160-39298-30	Uranium-233/234	10/2/2020	0.848				0.172	0.05		pCi/g
789UMR-TP10-1824-01	160-39298-30	Uranium-235/236	10/2/2020	0.0689				0.0508	0.04		pCi/g
789UMR-TP10-1824-01	160-39298-30	Uranium-238	10/2/2020	0.875				0.174	0.03		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1824-01	160-39298-30	Actinium 228	10/1/2020	2.66				0.499	0.18		pCi/g
789UMR-TP10-1824-01	160-39298-30	Bismuth-212	10/1/2020	3.5				1.32	0.95		pCi/g
789UMR-TP10-1824-01	160-39298-30	Bismuth-214	10/1/2020	1.37				0.318	0.19		pCi/g
789UMR-TP10-1824-01	160-39298-30	Cesium-137	10/1/2020	-0.13	U		U	0.167	0.29		pCi/g
789UMR-TP10-1824-01	160-39298-30	Lead-212	10/1/2020	2.33				0.39	0.17		pCi/g
789UMR-TP10-1824-01	160-39298-30	Lead-214	10/1/2020	1.27				0.269	0.25		pCi/g
789UMR-TP10-1824-01	160-39298-30	Potassium-40	10/1/2020	16.4				3.13	1.25		pCi/g
789UMR-TP10-1824-01	160-39298-30	Protactinium-234	10/1/2020	-0.0821	U		U	0.211	0.86		pCi/g
789UMR-TP10-1824-01	160-39298-30	Radium-224	10/1/2020	2.33				0.39	0.17		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP10-1824-01	160-39298-30	Radium-226	10/1/2020	1.37				0.318	0.19		pCi/g
789UMR-TP10-1824-01	160-39298-30	Radium-228	10/1/2020	2.66				0.499	0.18		pCi/g
789UMR-TP10-1824-01	160-39298-30	Thallium-208	10/1/2020	0.894				0.19	0.10		pCi/g
789UMR-TP10-1824-01	160-39298-30	Thorium-234	10/1/2020	-1.33	U		U	1.32	3.56		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0006-01	160-39298-31	Thorium	10/6/2020	39					0.96	0.65	mg/Kg
789UMR-TP11-0006-01	160-39298-31	Thorium	10/6/2020	4.3					0.11	0.071	pCi/g
789UMR-TP11-0006-01	160-39298-31	U-233	10/8/2020	0.014	^				0.02	0.014	mg/Kg
789UMR-TP11-0006-01	160-39298-31	U-234	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-0006-01	160-39298-31	U-235	10/8/2020	0.38					0.02	0.014	mg/Kg
789UMR-TP11-0006-01	160-39298-31	U-236	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-0006-01	160-39298-31	U-238	10/8/2020	50	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0006-01	160-39298-31	Thorium-228	10/16/2020	36.9	G			11.4	7.36		pCi/g
789UMR-TP11-0006-01	160-39298-31	Thorium-230	10/16/2020	18.3	G			7.63	4.17		pCi/g
789UMR-TP11-0006-01	160-39298-31	Thorium-232	10/16/2020	32.4	G			10.2	3.59		pCi/g
789UMR-TP11-0006-01	160-39298-31	Uranium-233/234	9/28/2020	45.1				4.29	0.13		pCi/g
789UMR-TP11-0006-01	160-39298-31	Uranium-235/236	9/28/2020	1.81				0.476	0.13		pCi/g
789UMR-TP11-0006-01	160-39298-31	Uranium-238	9/28/2020	43.9				4.19	0.12		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0006-01	160-39298-31	Actinium 228	10/1/2020	286				29.3	2.24		pCi/g
789UMR-TP11-0006-01	160-39298-31	Bismuth-212	10/1/2020	286				30.7	7.81		pCi/g
789UMR-TP11-0006-01	160-39298-31	Bismuth-214	10/1/2020	61.3				6.5	1.25		pCi/g
789UMR-TP11-0006-01	160-39298-31	Cesium-137	10/1/2020	-0.275	U		U	0.707	1.17		pCi/g
789UMR-TP11-0006-01	160-39298-31	Lead-212	10/1/2020	291				37.7	1.26		pCi/g
789UMR-TP11-0006-01	160-39298-31	Lead-214	10/1/2020	67.3				7.12	1.61		pCi/g
789UMR-TP11-0006-01	160-39298-31	Potassium-40	10/1/2020	15				5.97	5.47		pCi/g
789UMR-TP11-0006-01	160-39298-31	Protactinium-234	10/1/2020	-1.27	U		U	3.83	6.31		pCi/g
789UMR-TP11-0006-01	160-39298-31	Radium-224	10/1/2020	291				37.7	1.26		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0006-01	160-39298-31	Radium-226	10/1/2020	61.3	G			6.5	1.25		pCi/g
789UMR-TP11-0006-01	160-39298-31	Radium-228	10/1/2020	286				29.3	2.24		pCi/g
789UMR-TP11-0006-01	160-39298-31	Thallium-208	10/1/2020	99.6				10.4	0.90		pCi/g
789UMR-TP11-0006-01	160-39298-31	Thorium-234	10/1/2020	17.9	U		U	4.49	33.1		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0612-01	160-39298-32	Thorium	10/6/2020	42					0.95	0.64	mg/Kg
789UMR-TP11-0612-01	160-39298-32	Thorium	10/6/2020	4.6					0.1	0.07	pCi/g
789UMR-TP11-0612-01	160-39298-32	U-233	10/8/2020	0.014	^				0.02	0.014	mg/Kg
789UMR-TP11-0612-01	160-39298-32	U-234	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-0612-01	160-39298-32	U-235	10/8/2020	0.46					0.02	0.014	mg/Kg
789UMR-TP11-0612-01	160-39298-32	U-236	10/8/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-0612-01	160-39298-32	U-238	10/8/2020	59	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0612-01	160-39298-32	Thorium-228	10/16/2020	877	G			91.4	7.82		pCi/g
789UMR-TP11-0612-01	160-39298-32	Thorium-230	10/16/2020	137	G			24.3	4.68		pCi/g
789UMR-TP11-0612-01	160-39298-32	Thorium-232	10/16/2020	864	G			90.2	4.02		pCi/g
789UMR-TP11-0612-01	160-39298-32	Uranium-233/234	10/2/2020	48.2		J	J	4.58	0.13		pCi/g
789UMR-TP11-0612-01	160-39298-32	Uranium-235/236	10/2/2020	2.25		J	J	0.551	0.08		pCi/g
789UMR-TP11-0612-01	160-39298-32	Uranium-238	10/2/2020	49.1		J	J	4.65	0.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0612-01	160-39298-32	Actinium 228	10/1/2020	331				33.9	1.81		pCi/g
789UMR-TP11-0612-01	160-39298-32	Bismuth-212	10/1/2020	337				35.9	7.62		pCi/g
789UMR-TP11-0612-01	160-39298-32	Bismuth-214	10/1/2020	73.1				7.7	1.14		pCi/g
789UMR-TP11-0612-01	160-39298-32	Cesium-137	10/1/2020	-0.453	U		U	0.652	1.07		pCi/g
789UMR-TP11-0612-01	160-39298-32	Lead-212	10/1/2020	343				44.5	1.18		pCi/g
789UMR-TP11-0612-01	160-39298-32	Lead-214	10/1/2020	77.4				8.16	1.54		pCi/g
789UMR-TP11-0612-01	160-39298-32	Potassium-40	10/1/2020	9.51				5.68	5.39		pCi/g
789UMR-TP11-0612-01	160-39298-32	Protactinium-234	10/1/2020	1.69	U		U	2.71	6.26		pCi/g
789UMR-TP11-0612-01	160-39298-32	Radium-224	10/1/2020	343				44.5	1.18		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-0612-01	160-39298-32	Radium-226	10/1/2020	73.1	G			7.7	1.14		pCi/g
789UMR-TP11-0612-01	160-39298-32	Radium-228	10/1/2020	331				33.9	1.81		pCi/g
789UMR-TP11-0612-01	160-39298-32	Thallium-208	10/1/2020	114				11.9	0.8		pCi/g
789UMR-TP11-0612-01	160-39298-32	Thorium-234	10/1/2020	19.5	U		U	4.28	32.5		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1218-01	160-39298-33	Thorium	10/13/2020	26	B	J	J		0.97	0.65	mg/Kg
789UMR-TP11-1218-01	160-39298-33	Thorium	10/13/2020	2.8	B	J	J		0.11	0.072	pCi/g
789UMR-TP11-1218-01	160-39298-33	U-233	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP11-1218-01	160-39298-33	U-234	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP11-1218-01	160-39298-33	U-235	10/12/2020	0.34	F1	J	J		0.02	0.015	mg/Kg
789UMR-TP11-1218-01	160-39298-33	U-236	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP11-1218-01	160-39298-33	U-238	10/12/2020	46	B F2	J	J		0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1218-01	160-39298-33	Thorium-228	10/16/2020	1440	G			137	6.15		pCi/g
789UMR-TP11-1218-01	160-39298-33	Thorium-230	10/16/2020	235	G			32.8	4.82		pCi/g
789UMR-TP11-1218-01	160-39298-33	Thorium-232	10/16/2020	1430	G			136	4.8		pCi/g
789UMR-TP11-1218-01	160-39298-33	Uranium-233/234	10/2/2020	36				3.46	0.05		pCi/g
789UMR-TP11-1218-01	160-39298-33	Uranium-235/236	10/2/2020	1.73				0.436	0.15		pCi/g
789UMR-TP11-1218-01	160-39298-33	Uranium-238	10/2/2020	35.5				3.41	0.09		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1218-01	160-39298-33	Actinium 228	10/6/2020	298				30.5	1.84		pCi/g
789UMR-TP11-1218-01	160-39298-33	Bismuth-212	10/6/2020	302				32.2	7.51		pCi/g
789UMR-TP11-1218-01	160-39298-33	Bismuth-214	10/6/2020	66.2				7.16	1.5		pCi/g
789UMR-TP11-1218-01	160-39298-33	Cesium-137	10/6/2020	-0.445	U		U	0.763	0.84		pCi/g
789UMR-TP11-1218-01	160-39298-33	Lead-212	10/6/2020	311				40.2	1.11		pCi/g
789UMR-TP11-1218-01	160-39298-33	Lead-214	10/6/2020	69.9				7.34	1.25		pCi/g
789UMR-TP11-1218-01	160-39298-33	Potassium-40	10/6/2020	2.88	U		U	4.31	7.1		pCi/g
789UMR-TP11-1218-01	160-39298-33	Protactinium-234	10/6/2020	0.219	U		U	0.353	6.34		pCi/g
789UMR-TP11-1218-01	160-39298-33	Radium-224	10/6/2020	311				40.2	1.11		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1218-01	160-39298-33	Radium-226	10/6/2020	66.2	G			7.16	1.5		pCi/g
789UMR-TP11-1218-01	160-39298-33	Radium-228	10/6/2020	298				30.5	1.84		pCi/g
789UMR-TP11-1218-01	160-39298-33	Thallium-208	10/6/2020	102				10.6	0.74		pCi/g
789UMR-TP11-1218-01	160-39298-33	Thorium-234	10/6/2020	18.9	U		U	4.13	31.7		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1824-01	160-39298-34	Thorium	10/13/2020	2.4	B	J	J		0.11	0.071	pCi/g
789UMR-TP11-1824-01	160-39298-34	Thorium	10/13/2020	22	B	J	J		0.96	0.65	mg/Kg
789UMR-TP11-1824-01	160-39298-34	U-233	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-1824-01	160-39298-34	U-234	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-1824-01	160-39298-34	U-235	10/12/2020	0.33		J	J		0.02	0.014	mg/Kg
789UMR-TP11-1824-01	160-39298-34	U-236	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-1824-01	160-39298-34	U-238	10/12/2020	43	B	J	J		0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1824-01	160-39298-34	Thorium-228	10/16/2020	1110	G			110	6.94		pCi/g
789UMR-TP11-1824-01	160-39298-34	Thorium-230	10/16/2020	178	G			28.1	5.91		pCi/g
789UMR-TP11-1824-01	160-39298-34	Thorium-232	10/16/2020	1100	G			110	4.85		pCi/g
789UMR-TP11-1824-01	160-39298-34	Uranium-233/234	10/2/2020	18.4				1.76	0.07		pCi/g
789UMR-TP11-1824-01	160-39298-34	Uranium-235/236	10/2/2020	0.939				0.223	0.06		pCi/g
789UMR-TP11-1824-01	160-39298-34	Uranium-238	10/2/2020	18.3				1.74	0.06		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1824-01	160-39298-34	Actinium 228	10/1/2020	207				21.2	1.79		pCi/g
789UMR-TP11-1824-01	160-39298-34	Bismuth-212	10/1/2020	224				25.4	8.05		pCi/g
789UMR-TP11-1824-01	160-39298-34	Bismuth-214	10/1/2020	54.3				5.76	1.12		pCi/g
789UMR-TP11-1824-01	160-39298-34	Cesium-137	10/1/2020	0.166	U		U	0.583	0.96		pCi/g
789UMR-TP11-1824-01	160-39298-34	Lead-212	10/1/2020	215				27.9	1.01		pCi/g
789UMR-TP11-1824-01	160-39298-34	Lead-214	10/1/2020	61				6.57	1.41		pCi/g
789UMR-TP11-1824-01	160-39298-34	Potassium-40	10/1/2020	10.8				3.84	5.84		pCi/g
789UMR-TP11-1824-01	160-39298-34	Protactinium-234	10/1/2020	2.55				1.24	1.98		pCi/g
789UMR-TP11-1824-01	160-39298-34	Radium-224	10/1/2020	215				27.9	1.01		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-1824-01	160-39298-34	Radium-226	10/1/2020	54.3	G			5.76	1.12		pCi/g
789UMR-TP11-1824-01	160-39298-34	Radium-228	10/1/2020	207				21.2	1.79		pCi/g
789UMR-TP11-1824-01	160-39298-34	Thallium-208	10/1/2020	73.6				7.72	0.71		pCi/g
789UMR-TP11-1824-01	160-39298-34	Thorium-234	10/1/2020	13.7	U		U	3.53	25.9		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-2430-01	160-39298-35	Thorium	10/13/2020	2.7	B	J	J		0.1	0.069	pCi/g
789UMR-TP11-2430-01	160-39298-35	Thorium	10/13/2020	24	B	J	J		0.93	0.63	mg/Kg
789UMR-TP11-2430-01	160-39298-35	U-233	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-2430-01	160-39298-35	U-234	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-2430-01	160-39298-35	U-235	10/12/2020	0.23		J	J		0.02	0.014	mg/Kg
789UMR-TP11-2430-01	160-39298-35	U-236	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP11-2430-01	160-39298-35	U-238	10/12/2020	31	B	J	J		0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-2430-01	160-39298-35	Thorium-228	10/20/2020	50.4	G			14	8.41		pCi/g
789UMR-TP11-2430-01	160-39298-35	Thorium-230	10/20/2020	27	G			9.77	5.03		pCi/g
789UMR-TP11-2430-01	160-39298-35	Thorium-232	10/20/2020	59.2	G			14.8	5		pCi/g
789UMR-TP11-2430-01	160-39298-35	Uranium-233/234	10/2/2020	28.8				2.77	0.10		pCi/g
789UMR-TP11-2430-01	160-39298-35	Uranium-235/236	10/2/2020	1.77				0.401	0.09		pCi/g
789UMR-TP11-2430-01	160-39298-35	Uranium-238	10/2/2020	28.2				2.72	0.07		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-2430-01	160-39298-35	Actinium 228	10/1/2020	195				20	1.57		pCi/g
789UMR-TP11-2430-01	160-39298-35	Bismuth-212	10/1/2020	202				21.8	5.8		pCi/g
789UMR-TP11-2430-01	160-39298-35	Bismuth-214	10/1/2020	47.8				5.08	0.87		pCi/g
789UMR-TP11-2430-01	160-39298-35	Cesium-137	10/1/2020	-0.373	U		U	0.542	0.89		pCi/g
789UMR-TP11-2430-01	160-39298-35	Lead-212	10/1/2020	207				26.8	0.90		pCi/g
789UMR-TP11-2430-01	160-39298-35	Lead-214	10/1/2020	49.4				5.25	1.3		pCi/g
789UMR-TP11-2430-01	160-39298-35	Potassium-40	10/1/2020	2.37	U		U	3.56	5.87		pCi/g
789UMR-TP11-2430-01	160-39298-35	Protactinium-234	10/1/2020	0.159	U		U	0.256	5.1		pCi/g
789UMR-TP11-2430-01	160-39298-35	Radium-224	10/1/2020	207				26.8	0.90		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP11-2430-01	160-39298-35	Radium-226	10/1/2020	47.8				5.08	0.87		pCi/g
789UMR-TP11-2430-01	160-39298-35	Radium-228	10/1/2020	195				20	1.57		pCi/g
789UMR-TP11-2430-01	160-39298-35	Thallium-208	10/1/2020	67.2				7.04	0.61		pCi/g
789UMR-TP11-2430-01	160-39298-35	Thorium-234	10/1/2020	13	U		U	3.48	26.9		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0002-01	160-39298-36	Thorium	10/13/2020	22	B	J	J		0.88	0.59	mg/Kg
789UMR-TP12-0002-01	160-39298-36	Thorium	10/13/2020	2.5	B	J	J		0.09	0.065	pCi/g
789UMR-TP12-0002-01	160-39298-36	U-233	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP12-0002-01	160-39298-36	U-234	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP12-0002-01	160-39298-36	U-235	10/12/2020	0.5		J	J		0.02	0.013	mg/Kg
789UMR-TP12-0002-01	160-39298-36	U-236	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP12-0002-01	160-39298-36	U-238	10/12/2020	67	B	J	J		0.02	0.013	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0002-01	160-39298-36	Thorium-228	10/20/2020	1260	G			124	6.47		pCi/g
789UMR-TP12-0002-01	160-39298-36	Thorium-230	10/20/2020	233	G			34	5.86		pCi/g
789UMR-TP12-0002-01	160-39298-36	Thorium-232	10/20/2020	1330	G			129	5.47		pCi/g
789UMR-TP12-0002-01	160-39298-36	Uranium-233/234	10/2/2020	70		J	J	6.6	0.15		pCi/g
789UMR-TP12-0002-01	160-39298-36	Uranium-235/236	10/2/2020	3.85		J	J	0.848	0.19		pCi/g
789UMR-TP12-0002-01	160-39298-36	Uranium-238	10/2/2020	70.5		J	J	6.64	0.15		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0002-01	160-39298-36	Actinium 228	10/6/2020	518				53	3.13		pCi/g
789UMR-TP12-0002-01	160-39298-36	Bismuth-212	10/6/2020	519				55.2	12.1		pCi/g
789UMR-TP12-0002-01	160-39298-36	Bismuth-214	10/6/2020	107				11.3	1.84		pCi/g
789UMR-TP12-0002-01	160-39298-36	Cesium-137	10/6/2020	0.59	U		U	1.15	1.89		pCi/g
789UMR-TP12-0002-01	160-39298-36	Lead-212	10/6/2020	502				64.9	1.63		pCi/g
789UMR-TP12-0002-01	160-39298-36	Lead-214	10/6/2020	107				11.3	1.91		pCi/g
789UMR-TP12-0002-01	160-39298-36	Potassium-40	10/6/2020	2.3	U		U	7.23	12		pCi/g
789UMR-TP12-0002-01	160-39298-36	Protactinium-234	10/6/2020	2.14	U		U	1.98	3.1		pCi/g
789UMR-TP12-0002-01	160-39298-36	Radium-224	10/6/2020	502				64.9	1.63		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0002-01	160-39298-36	Radium-226	10/6/2020	107	G			11.3	1.84		pCi/g
789UMR-TP12-0002-01	160-39298-36	Radium-228	10/6/2020	518				53	3.13		pCi/g
789UMR-TP12-0002-01	160-39298-36	Thallium-208	10/6/2020	184				19.2	1.29		pCi/g
789UMR-TP12-0002-01	160-39298-36	Thorium-234	10/6/2020	19.8	U		U	4.94	36		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0204-01	160-39298-37	Thorium	10/13/2020	23	B	J	J		1.1	0.71	mg/Kg
789UMR-TP12-0204-01	160-39298-37	Thorium	10/13/2020	2.5	B	J	J		0.12	0.078	pCi/g
789UMR-TP12-0204-01	160-39298-37	U-233	10/14/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP12-0204-01	160-39298-37	U-234	10/14/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP12-0204-01	160-39298-37	U-235	10/14/2020	0.14		J	J		0.03	0.016	mg/Kg
789UMR-TP12-0204-01	160-39298-37	U-236	10/14/2020	0.016					0.03	0.016	mg/Kg
789UMR-TP12-0204-01	160-39298-37	U-238	10/14/2020	19	B	J	J		0.03	0.016	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0204-01	160-39298-37	Thorium-228	10/16/2020	122	G			21.3	7.33		pCi/g
789UMR-TP12-0204-01	160-39298-37	Thorium-230	10/16/2020	41.2	G			11.4	5.2		pCi/g
789UMR-TP12-0204-01	160-39298-37	Thorium-232	10/16/2020	88.3	G			17.3	4.61		pCi/g
789UMR-TP12-0204-01	160-39298-37	Uranium-233/234	9/25/2020	13.1				1.35	0.08		pCi/g
789UMR-TP12-0204-01	160-39298-37	Uranium-235/236	9/25/2020	0.87		U	U	0.234	0.06		pCi/g
789UMR-TP12-0204-01	160-39298-37	Uranium-238	9/25/2020	13.9				1.41	0.09		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0204-01	160-39298-37	Actinium 228	10/2/2020	73.8				7.7	1.07		pCi/g
789UMR-TP12-0204-01	160-39298-37	Bismuth-212	10/2/2020	77.4				10.7	5.4		pCi/g
789UMR-TP12-0204-01	160-39298-37	Bismuth-214	10/2/2020	15.5				1.88	0.75		pCi/g
789UMR-TP12-0204-01	160-39298-37	Cesium-137	10/2/2020	-0.156	U		U	0.358	0.59		pCi/g
789UMR-TP12-0204-01	160-39298-37	Lead-212	10/2/2020	80.9				10.5	0.60		pCi/g
789UMR-TP12-0204-01	160-39298-37	Lead-214	10/2/2020	17				1.87	0.66		pCi/g
789UMR-TP12-0204-01	160-39298-37	Potassium-40	10/2/2020	22.7				4.35	2.68		pCi/g
789UMR-TP12-0204-01	160-39298-37	Protactinium-234	10/2/2020	-0.149	U		U	0.348	3.42		pCi/g
789UMR-TP12-0204-01	160-39298-37	Radium-224	10/2/2020	80.9				10.5	0.60		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0204-01	160-39298-37	Radium-226	10/2/2020	15.5				1.88	0.75		pCi/g
789UMR-TP12-0204-01	160-39298-37	Radium-228	10/2/2020	73.8				7.7	1.07		pCi/g
789UMR-TP12-0204-01	160-39298-37	Thallium-208	10/2/2020	25.2				2.71	0.43		pCi/g
789UMR-TP12-0204-01	160-39298-37	Thorium-234	10/2/2020	5.51	U		U	1.88	21.6		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0406-01	160-39298-38	Thorium	10/13/2020	8.4	B	J	J		0.98	0.66	mg/Kg
789UMR-TP12-0406-01	160-39298-38	Thorium	10/13/2020	0.92	B	J	J		0.11	0.073	pCi/g
789UMR-TP12-0406-01	160-39298-38	U-233	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP12-0406-01	160-39298-38	U-234	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP12-0406-01	160-39298-38	U-235	10/12/2020	0.019	J	UJ	UJ		0.02	0.015	mg/Kg
789UMR-TP12-0406-01	160-39298-38	U-236	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP12-0406-01	160-39298-38	U-238	10/12/2020	2.4	B	J	J		0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0406-01	160-39298-38	Thorium-228	10/6/2020	4.9				0.595	0.12		pCi/g
789UMR-TP12-0406-01	160-39298-38	Thorium-230	10/6/2020	1.88				0.319	0.13		pCi/g
789UMR-TP12-0406-01	160-39298-38	Thorium-232	10/6/2020	5.12				0.611	0.07		pCi/g
789UMR-TP12-0406-01	160-39298-38	Uranium-233/234	10/2/2020	0.769				0.216	0.12		pCi/g
789UMR-TP12-0406-01	160-39298-38	Uranium-235/236	10/2/2020	0.0561	U		U	0.0652	0.08		pCi/g
789UMR-TP12-0406-01	160-39298-38	Uranium-238	10/2/2020	0.976				0.242	0.10		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0406-01	160-39298-38	Actinium 228	10/2/2020	4.94				0.784	0.27		pCi/g
789UMR-TP12-0406-01	160-39298-38	Bismuth-212	10/2/2020	7.17				1.64	0.88		pCi/g
789UMR-TP12-0406-01	160-39298-38	Bismuth-214	10/2/2020	1.9				0.378	0.23		pCi/g
789UMR-TP12-0406-01	160-39298-38	Cesium-137	10/2/2020	0.00671	U		U	0.137	0.23		pCi/g
789UMR-TP12-0406-01	160-39298-38	Lead-212	10/2/2020	5.66				0.689	0.24		pCi/g
789UMR-TP12-0406-01	160-39298-38	Lead-214	10/2/2020	2.06				0.385	0.31		pCi/g
789UMR-TP12-0406-01	160-39298-38	Potassium-40	10/2/2020	21.8				3.51	1.08		pCi/g
789UMR-TP12-0406-01	160-39298-38	Protactinium-234	10/2/2020	0.0613	U		U	0.107	1.36		pCi/g
789UMR-TP12-0406-01	160-39298-38	Radium-224	10/2/2020	5.66				0.689	0.24		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP12-0406-01	160-39298-38	Radium-226	10/2/2020	1.9				0.378	0.23		pCi/g
789UMR-TP12-0406-01	160-39298-38	Radium-228	10/2/2020	4.94				0.784	0.27		pCi/g
789UMR-TP12-0406-01	160-39298-38	Thallium-208	10/2/2020	2.04				0.315	0.14		pCi/g
789UMR-TP12-0406-01	160-39298-38	Thorium-234	10/2/2020	2.28	U		U	1.54	2.59		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0006-01	160-39298-39	Thorium	10/13/2020	1.9	B	J	J		0.11	0.072	pCi/g
789UMR-TP13-0006-01	160-39298-39	Thorium	10/13/2020	17	B	J	J		0.97	0.66	mg/Kg
789UMR-TP13-0006-01	160-39298-39	U-233	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP13-0006-01	160-39298-39	U-234	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP13-0006-01	160-39298-39	U-235	10/12/2020	0.13		J	J		0.02	0.015	mg/Kg
789UMR-TP13-0006-01	160-39298-39	U-236	10/12/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP13-0006-01	160-39298-39	U-238	10/12/2020	16	B	J	J		0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0006-01	160-39298-39	Thorium-228	10/6/2020	33.2				3	0.11		pCi/g
789UMR-TP13-0006-01	160-39298-39	Thorium-230	10/6/2020	6.25				0.716	0.12		pCi/g
789UMR-TP13-0006-01	160-39298-39	Thorium-232	10/6/2020	30.9				2.81	0.05		pCi/g
789UMR-TP13-0006-01	160-39298-39	Uranium-233/234	9/25/2020	13.9				1.4	0.07		pCi/g
789UMR-TP13-0006-01	160-39298-39	Uranium-235/236	9/25/2020	0.718		U	U	0.207	0.07		pCi/g
789UMR-TP13-0006-01	160-39298-39	Uranium-238	9/25/2020	13.3				1.35	0.08		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0006-01	160-39298-39	Actinium 228	10/2/2020	87.1				9.01	0.87		pCi/g
789UMR-TP13-0006-01	160-39298-39	Bismuth-212	10/2/2020	86.9				9.78	3.8		pCi/g
789UMR-TP13-0006-01	160-39298-39	Bismuth-214	10/2/2020	22.1				2.49	0.73		pCi/g
789UMR-TP13-0006-01	160-39298-39	Cesium-137	10/2/2020	-0.234	U		U	0.338	0.55		pCi/g
789UMR-TP13-0006-01	160-39298-39	Lead-212	10/2/2020	94.2				12.2	0.59		pCi/g
789UMR-TP13-0006-01	160-39298-39	Lead-214	10/2/2020	22.8				2.45	0.63		pCi/g
789UMR-TP13-0006-01	160-39298-39	Potassium-40	10/2/2020	16				3.86	2.77		pCi/g
789UMR-TP13-0006-01	160-39298-39	Protactinium-234	10/2/2020	0.657	U		U	2	3.5		pCi/g
789UMR-TP13-0006-01	160-39298-39	Radium-224	10/2/2020	94.2				12.2	0.59		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0006-01	160-39298-39	Radium-226	10/2/2020	22.1				2.49	0.73		pCi/g
789UMR-TP13-0006-01	160-39298-39	Radium-228	10/2/2020	87.1				9.01	0.87		pCi/g
789UMR-TP13-0006-01	160-39298-39	Thallium-208	10/2/2020	29.8				3.14	0.33		pCi/g
789UMR-TP13-0006-01	160-39298-39	Thorium-234	10/2/2020	8.36	U		U	2.4	15.7		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-01	160-39298-4	Thorium	9/29/2020	41	F1	J	J		0.97	0.66	mg/Kg
789UMR-TP05-1824-01	160-39298-4	Thorium	9/29/2020	4.4	F1	J	J		0.11	0.072	pCi/g
789UMR-TP05-1824-01	160-39298-4	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-1824-01	160-39298-4	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-1824-01	160-39298-4	U-235	9/30/2020	0.6		J	J		0.02	0.015	mg/Kg
789UMR-TP05-1824-01	160-39298-4	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-1824-01	160-39298-4	U-238	9/30/2020	79	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-01	160-39298-4	Thorium-228	10/29/2020	216				20.5	0.77		pCi/g
789UMR-TP05-1824-01	160-39298-4	Thorium-230	10/29/2020	31.8				4.51	0.31		pCi/g
789UMR-TP05-1824-01	160-39298-4	Thorium-232	10/29/2020	193				18.5	0.31		pCi/g
789UMR-TP05-1824-01	160-39298-4	Uranium-233/234	9/29/2020	60.3	F	J	J	5.71	0.22		pCi/g
789UMR-TP05-1824-01	160-39298-4	Uranium-235/236	9/29/2020	2.6		J	J	0.652	0.20		pCi/g
789UMR-TP05-1824-01	160-39298-4	Uranium-238	9/29/2020	60.6	F	J	J	5.74	0.25		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-01	160-39298-4	Actinium 228	10/2/2020	492				50.3	2.15		pCi/g
789UMR-TP05-1824-01	160-39298-4	Bismuth-212	10/2/2020	486				51.2	8.53		pCi/g
789UMR-TP05-1824-01	160-39298-4	Bismuth-214	10/2/2020	102				10.7	1.25		pCi/g
789UMR-TP05-1824-01	160-39298-4	Cesium-137	10/2/2020	0.451	U		U	0.779	1.28		pCi/g
789UMR-TP05-1824-01	160-39298-4	Lead-212	10/2/2020	462				59.8	1.31		pCi/g
789UMR-TP05-1824-01	160-39298-4	Lead-214	10/2/2020	105				11	1.42		pCi/g
789UMR-TP05-1824-01	160-39298-4	Potassium-40	10/2/2020	2.85	U		U	5.17	8.52		pCi/g
789UMR-TP05-1824-01	160-39298-4	Protactinium-234	10/2/2020	3.66	U		U	1.49	6.52		pCi/g
789UMR-TP05-1824-01	160-39298-4	Radium-224	10/2/2020	462				59.8	1.31		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-01	160-39298-4	Radium-226	10/2/2020	102	G			10.7	1.25		pCi/g
789UMR-TP05-1824-01	160-39298-4	Radium-228	10/2/2020	492				50.3	2.15		pCi/g
789UMR-TP05-1824-01	160-39298-4	Thallium-208	10/2/2020	165				17.2	0.92		pCi/g
789UMR-TP05-1824-01	160-39298-4	Thorium-234	10/2/2020	18.2	U	UJ	UJ	4.19	30.9		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0612-01	160-39298-40	Thorium	10/13/2020	0.61		J	J		0.9	0.61	mg/Kg
789UMR-TP13-0612-01	160-39298-40	Thorium	10/13/2020	0.066		J	J		0.09	0.066	pCi/g
789UMR-TP13-0612-01	160-39298-40	U-233	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP13-0612-01	160-39298-40	U-234	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP13-0612-01	160-39298-40	U-235	10/12/2020	0.088		J	J		0.02	0.013	mg/Kg
789UMR-TP13-0612-01	160-39298-40	U-236	10/12/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP13-0612-01	160-39298-40	U-238	10/12/2020	12	B	J	J		0.02	0.013	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0612-01	160-39298-40	Thorium-228	10/6/2020	49.9				4.44	0.14		pCi/g
789UMR-TP13-0612-01	160-39298-40	Thorium-230	10/6/2020	8.13				0.911	0.13		pCi/g
789UMR-TP13-0612-01	160-39298-40	Thorium-232	10/6/2020	44.3				3.97	0.06		pCi/g
789UMR-TP13-0612-01	160-39298-40	Uranium-233/234	9/25/2020	11.6				1.2	0.05		pCi/g
789UMR-TP13-0612-01	160-39298-40	Uranium-235/236	9/25/2020	0.646		U	U	0.193	0.08		pCi/g
789UMR-TP13-0612-01	160-39298-40	Uranium-238	9/25/2020	12				1.23	0.06		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0612-01	160-39298-40	Actinium 228	10/2/2020	60.9				6.31	0.68		pCi/g
789UMR-TP13-0612-01	160-39298-40	Bismuth-212	10/2/2020	67.7				8.44	3.68		pCi/g
789UMR-TP13-0612-01	160-39298-40	Bismuth-214	10/2/2020	15.6				1.74	0.50		pCi/g
789UMR-TP13-0612-01	160-39298-40	Cesium-137	10/2/2020	-0.217	U		U	0.318	0.52		pCi/g
789UMR-TP13-0612-01	160-39298-40	Lead-212	10/2/2020	66.9				8.7	0.51		pCi/g
789UMR-TP13-0612-01	160-39298-40	Lead-214	10/2/2020	16.9				1.84	0.56		pCi/g
789UMR-TP13-0612-01	160-39298-40	Potassium-40	10/2/2020	20				3.68	2.16		pCi/g
789UMR-TP13-0612-01	160-39298-40	Protactinium-234	10/2/2020	0.872	U		U	1.34	2.99		pCi/g
789UMR-TP13-0612-01	160-39298-40	Radium-224	10/2/2020	66.9				8.7	0.51		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-0612-01	160-39298-40	Radium-226	10/2/2020	15.6				1.74	0.50		pCi/g
789UMR-TP13-0612-01	160-39298-40	Radium-228	10/2/2020	60.9				6.31	0.68		pCi/g
789UMR-TP13-0612-01	160-39298-40	Thallium-208	10/2/2020	21.2				2.25	0.26		pCi/g
789UMR-TP13-0612-01	160-39298-40	Thorium-234	10/2/2020	3.37	U		U	1.37	17.1		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1218-01	160-39298-41	Thorium	10/13/2020	20	B	J	J		1	0.69	mg/Kg
789UMR-TP13-1218-01	160-39298-41	Thorium	10/13/2020	2.2	B	J	J		0.11	0.075	pCi/g
789UMR-TP13-1218-01	160-39298-41	U-233	10/12/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP13-1218-01	160-39298-41	U-234	10/12/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP13-1218-01	160-39298-41	U-235	10/12/2020	0.2		J	J		0.03	0.015	mg/Kg
789UMR-TP13-1218-01	160-39298-41	U-236	10/12/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP13-1218-01	160-39298-41	U-238	10/12/2020	27	B	J	J		0.03	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1218-01	160-39298-41	Thorium-228	10/16/2020	711	G			75.9	9.18		pCi/g
789UMR-TP13-1218-01	160-39298-41	Thorium-230	10/16/2020	146	G			24.5	4.73		pCi/g
789UMR-TP13-1218-01	160-39298-41	Thorium-232	10/16/2020	692	G			74.1	5.08		pCi/g
789UMR-TP13-1218-01	160-39298-41	Uranium-233/234	9/25/2020	20				1.98	0.12		pCi/g
789UMR-TP13-1218-01	160-39298-41	Uranium-235/236	9/25/2020	0.969		U	U	0.274	0.11		pCi/g
789UMR-TP13-1218-01	160-39298-41	Uranium-238	9/25/2020	20				1.98	0.10		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1218-01	160-39298-41	Actinium 228	10/2/2020	88.8				9.14	0.86		pCi/g
789UMR-TP13-1218-01	160-39298-41	Bismuth-212	10/2/2020	91.4				10.2	3.68		pCi/g
789UMR-TP13-1218-01	160-39298-41	Bismuth-214	10/2/2020	21				2.28	0.56		pCi/g
789UMR-TP13-1218-01	160-39298-41	Cesium-137	10/2/2020	-0.228	U		U	0.329	0.54		pCi/g
789UMR-TP13-1218-01	160-39298-41	Lead-212	10/2/2020	94.1				12.2	0.61		pCi/g
789UMR-TP13-1218-01	160-39298-41	Lead-214	10/2/2020	22.5				2.43	0.81		pCi/g
789UMR-TP13-1218-01	160-39298-41	Potassium-40	10/2/2020	4.77				2.17	3.34		pCi/g
789UMR-TP13-1218-01	160-39298-41	Protactinium-234	10/2/2020	-0.68	U		U	1.99	3.29		pCi/g
789UMR-TP13-1218-01	160-39298-41	Radium-224	10/2/2020	94.1				12.2	0.61		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1218-01	160-39298-41	Radium-226	10/2/2020	21				2.28	0.56		pCi/g
789UMR-TP13-1218-01	160-39298-41	Radium-228	10/2/2020	88.8				9.14	0.86		pCi/g
789UMR-TP13-1218-01	160-39298-41	Thallium-208	10/2/2020	30.4				3.22	0.39		pCi/g
789UMR-TP13-1218-01	160-39298-41	Thorium-234	10/2/2020	4.78	U		U	1.55	17.8		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1824-01	160-39298-42	Thorium	10/13/2020	19	B	J	J		0.96	0.65	mg/Kg
789UMR-TP13-1824-01	160-39298-42	Thorium	10/13/2020	2	B	J	J		0.11	0.071	pCi/g
789UMR-TP13-1824-01	160-39298-42	U-233	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP13-1824-01	160-39298-42	U-234	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP13-1824-01	160-39298-42	U-235	10/12/2020	0.16		J	J		0.02	0.014	mg/Kg
789UMR-TP13-1824-01	160-39298-42	U-236	10/12/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP13-1824-01	160-39298-42	U-238	10/12/2020	22	B	J	J		0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1824-01	160-39298-42	Thorium-228	10/16/2020	91.4	G			10.7	1.57		pCi/g
789UMR-TP13-1824-01	160-39298-42	Thorium-230	10/16/2020	18.5				3.7	0.45		pCi/g
789UMR-TP13-1824-01	160-39298-42	Thorium-232	10/16/2020	98.8				11.3	0.73		pCi/g
789UMR-TP13-1824-01	160-39298-42	Uranium-233/234	9/25/2020	18.6				1.85	0.10		pCi/g
789UMR-TP13-1824-01	160-39298-42	Uranium-235/236	9/25/2020	0.909		U	U	0.258	0.11		pCi/g
789UMR-TP13-1824-01	160-39298-42	Uranium-238	9/25/2020	18.6				1.85	0.09		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1824-01	160-39298-42	Actinium 228	10/2/2020	72.8				7.53	0.81		pCi/g
789UMR-TP13-1824-01	160-39298-42	Bismuth-212	10/2/2020	77.5				8.96	3.22		pCi/g
789UMR-TP13-1824-01	160-39298-42	Bismuth-214	10/2/2020	18.3				2.03	0.55		pCi/g
789UMR-TP13-1824-01	160-39298-42	Cesium-137	10/2/2020	0.186	U		U	0.269	0.44		pCi/g
789UMR-TP13-1824-01	160-39298-42	Lead-212	10/2/2020	77.3				10	0.50		pCi/g
789UMR-TP13-1824-01	160-39298-42	Lead-214	10/2/2020	19.5				2.09	0.56		pCi/g
789UMR-TP13-1824-01	160-39298-42	Potassium-40	10/2/2020	12.5				2.95	2.06		pCi/g
789UMR-TP13-1824-01	160-39298-42	Protactinium-234	10/2/2020	0.593	U		U	1.11	3.29		pCi/g
789UMR-TP13-1824-01	160-39298-42	Radium-224	10/2/2020	77.3				10	0.50		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP13-1824-01	160-39298-42	Radium-226	10/2/2020	18.3				2.03	0.55		pCi/g
789UMR-TP13-1824-01	160-39298-42	Radium-228	10/2/2020	72.8				7.53	0.81		pCi/g
789UMR-TP13-1824-01	160-39298-42	Thallium-208	10/2/2020	24.8				2.63	0.33		pCi/g
789UMR-TP13-1824-01	160-39298-42	Thorium-234	10/2/2020	6.43	U		U	2.05	15.6		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-02	160-39298-5	Thorium	9/29/2020	4.9		J	J		0.09	0.064	pCi/g
789UMR-TP05-1824-02	160-39298-5	Thorium	9/29/2020	45		J	J		0.86	0.58	mg/Kg
789UMR-TP05-1824-02	160-39298-5	U-233	9/30/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP05-1824-02	160-39298-5	U-234	9/30/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP05-1824-02	160-39298-5	U-235	9/30/2020	0.69		J	J		0.02	0.013	mg/Kg
789UMR-TP05-1824-02	160-39298-5	U-236	9/30/2020	0.013					0.02	0.013	mg/Kg
789UMR-TP05-1824-02	160-39298-5	U-238	10/1/2020	92					0.05	0.026	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-02	160-39298-5	Thorium-228	10/29/2020	248	G			23.1	1.33		pCi/g
789UMR-TP05-1824-02	160-39298-5	Thorium-230	10/29/2020	35.8				4.87	0.86		pCi/g
789UMR-TP05-1824-02	160-39298-5	Thorium-232	10/29/2020	235				22	0.79		pCi/g
789UMR-TP05-1824-02	160-39298-5	Uranium-233/234	9/29/2020	54.9	F	J	J	5.16	0.18		pCi/g
789UMR-TP05-1824-02	160-39298-5	Uranium-235/236	9/29/2020	2.89				0.639	0.14		pCi/g
789UMR-TP05-1824-02	160-39298-5	Uranium-238	9/29/2020	54.3	F	J	J	5.1	0.16		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-02	160-39298-5	Actinium 228	10/2/2020	492				50.3	1.72		pCi/g
789UMR-TP05-1824-02	160-39298-5	Bismuth-212	10/2/2020	489				51.5	8.43		pCi/g
789UMR-TP05-1824-02	160-39298-5	Bismuth-214	10/2/2020	103				10.9	1.7		pCi/g
789UMR-TP05-1824-02	160-39298-5	Cesium-137	10/2/2020	-0.496	U		U	0.718	1.18		pCi/g
789UMR-TP05-1824-02	160-39298-5	Lead-212	10/2/2020	466				60.3	1.31		pCi/g
789UMR-TP05-1824-02	160-39298-5	Lead-214	10/2/2020	105				10.9	1.45		pCi/g
789UMR-TP05-1824-02	160-39298-5	Potassium-40	10/2/2020	3.35	U		U	5.08	8.36		pCi/g
789UMR-TP05-1824-02	160-39298-5	Protactinium-234	10/2/2020	2.37	U		U	5.02	6.62		pCi/g
789UMR-TP05-1824-02	160-39298-5	Radium-224	10/2/2020	466				60.3	1.31		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-1824-02	160-39298-5	Radium-226	10/2/2020	103	G			10.9	1.7		pCi/g
789UMR-TP05-1824-02	160-39298-5	Radium-228	10/2/2020	492				50.3	1.72		pCi/g
789UMR-TP05-1824-02	160-39298-5	Thallium-208	10/2/2020	166				17.2	0.9		pCi/g
789UMR-TP05-1824-02	160-39298-5	Thorium-234	10/2/2020	17.1	U	UJ	UJ	4.37	32		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-2430-01	160-39298-6	Thorium	9/29/2020	3.6		J	J		0.11	0.072	pCi/g
789UMR-TP05-2430-01	160-39298-6	Thorium	9/29/2020	33		J	J		0.97	0.65	mg/Kg
789UMR-TP05-2430-01	160-39298-6	U-233	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-2430-01	160-39298-6	U-234	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-2430-01	160-39298-6	U-235	9/30/2020	0.55		J	J		0.02	0.015	mg/Kg
789UMR-TP05-2430-01	160-39298-6	U-236	9/30/2020	0.015					0.02	0.015	mg/Kg
789UMR-TP05-2430-01	160-39298-6	U-238	9/30/2020	73	B				0.02	0.015	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-2430-01	160-39298-6	Thorium-228	10/29/2020	158	G			15.2	1.18		pCi/g
789UMR-TP05-2430-01	160-39298-6	Thorium-230	10/29/2020	25.3				3.67	0.76		pCi/g
789UMR-TP05-2430-01	160-39298-6	Thorium-232	10/29/2020	148				14.3	0.53		pCi/g
789UMR-TP05-2430-01	160-39298-6	Uranium-233/234	9/29/2020	44.4	F	J	J	4.22	0.20		pCi/g
789UMR-TP05-2430-01	160-39298-6	Uranium-235/236	9/29/2020	2.23				0.529	0.13		pCi/g
789UMR-TP05-2430-01	160-39298-6	Uranium-238	9/29/2020	46.2	F	J	J	4.38	0.17		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-2430-01	160-39298-6	Actinium 228	10/2/2020	421				42.9	2.55		pCi/g
789UMR-TP05-2430-01	160-39298-6	Bismuth-212	10/2/2020	436				45.6	9.58		pCi/g
789UMR-TP05-2430-01	160-39298-6	Bismuth-214	10/2/2020	105				10.9	1.7		pCi/g
789UMR-TP05-2430-01	160-39298-6	Cesium-137	10/2/2020	-0.553	U		U	0.83	1.37		pCi/g
789UMR-TP05-2430-01	160-39298-6	Lead-212	10/2/2020	404				42.2	1.52		pCi/g
789UMR-TP05-2430-01	160-39298-6	Lead-214	10/2/2020	103				10.5	1.61		pCi/g
789UMR-TP05-2430-01	160-39298-6	Potassium-40	10/2/2020	4.05	U		U	5.52	9.08		pCi/g
789UMR-TP05-2430-01	160-39298-6	Protactinium-234	10/2/2020	0.265	U		U	0.399	8.21		pCi/g
789UMR-TP05-2430-01	160-39298-6	Radium-224	10/2/2020	404				42.2	1.52		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-2430-01	160-39298-6	Radium-226	10/2/2020	105	G			10.9	1.7		pCi/g
789UMR-TP05-2430-01	160-39298-6	Radium-228	10/2/2020	421				42.9	2.55		pCi/g
789UMR-TP05-2430-01	160-39298-6	Thallium-208	10/2/2020	148				15.1	1.05		pCi/g
789UMR-TP05-2430-01	160-39298-6	Thorium-234	10/2/2020	18.3	U	UJ	UJ	4.72	32.8		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3036-01	160-39298-7	Thorium	9/29/2020	31		J	J		0.95	0.64	mg/Kg
789UMR-TP05-3036-01	160-39298-7	Thorium	9/29/2020	3.4		J	J		0.1	0.07	pCi/g
789UMR-TP05-3036-01	160-39298-7	U-233	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-3036-01	160-39298-7	U-234	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-3036-01	160-39298-7	U-235	9/30/2020	0.6		J	J		0.02	0.014	mg/Kg
789UMR-TP05-3036-01	160-39298-7	U-236	9/30/2020	0.014					0.02	0.014	mg/Kg
789UMR-TP05-3036-01	160-39298-7	U-238	9/30/2020	79	B				0.02	0.014	mg/Kg

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3036-01	160-39298-7	Thorium-228	10/29/2020	102				10.2	0.91		pCi/g
789UMR-TP05-3036-01	160-39298-7	Thorium-230	10/29/2020	18.6				2.82	0.41		pCi/g
789UMR-TP05-3036-01	160-39298-7	Thorium-232	10/29/2020	93.7				9.47	0.55		pCi/g
789UMR-TP05-3036-01	160-39298-7	Uranium-233/234	9/29/2020	47	F	J	J	4.49	0.20		pCi/g
789UMR-TP05-3036-01	160-39298-7	Uranium-235/236	9/29/2020	2.83		J	J	0.634	0.18		pCi/g
789UMR-TP05-3036-01	160-39298-7	Uranium-238	9/29/2020	51.6	F	J	J	4.88	0.18		pCi/g

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Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3036-01	160-39298-7	Actinium 228	10/2/2020	316				32.4	2.37		pCi/g
789UMR-TP05-3036-01	160-39298-7	Bismuth-212	10/2/2020	340				37.1	9.29		pCi/g
789UMR-TP05-3036-01	160-39298-7	Bismuth-214	10/2/2020	71.4				7.51	1.23		pCi/g
789UMR-TP05-3036-01	160-39298-7	Cesium-137	10/2/2020	0.115	U		U	0.662	1.09		pCi/g
789UMR-TP05-3036-01	160-39298-7	Lead-212	10/2/2020	295				38.2	1.47		pCi/g
789UMR-TP05-3036-01	160-39298-7	Lead-214	10/2/2020	79.1				8.46	1.68		pCi/g
789UMR-TP05-3036-01	160-39298-7	Potassium-40	10/2/2020	3.18	U		U	3.92	6.43		pCi/g
789UMR-TP05-3036-01	160-39298-7	Protactinium-234	10/2/2020	1.25	U		U	3.66	5.66		pCi/g
789UMR-TP05-3036-01	160-39298-7	Radium-224	10/2/2020	295				38.2	1.47		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3036-01	160-39298-7	Radium-226	10/2/2020	71.4	G			7.51	1.23		pCi/g
789UMR-TP05-3036-01	160-39298-7	Radium-228	10/2/2020	316				32.4	2.37		pCi/g
789UMR-TP05-3036-01	160-39298-7	Thallium-208	10/2/2020	111				11.6	0.91		pCi/g
789UMR-TP05-3036-01	160-39298-7	Thorium-234	10/2/2020	15.7	U	UJ	UJ	3.8	27.3		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3654-01	160-39298-8	Thorium	9/29/2020	2.9		J	J		0.11	0.075	pCi/g
789UMR-TP05-3654-01	160-39298-8	Thorium	9/29/2020	26		J	J		1	0.68	mg/Kg
789UMR-TP05-3654-01	160-39298-8	U-233	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP05-3654-01	160-39298-8	U-234	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP05-3654-01	160-39298-8	U-235	9/30/2020	0.53		J	J		0.03	0.015	mg/Kg
789UMR-TP05-3654-01	160-39298-8	U-236	9/30/2020	0.015					0.03	0.015	mg/Kg
789UMR-TP05-3654-01	160-39298-8	U-238	9/30/2020	69	B				0.03	0.015	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3654-01	160-39298-8	Thorium-228	10/29/2020	25.6				2.38	0.14		pCi/g
789UMR-TP05-3654-01	160-39298-8	Thorium-230	10/29/2020	6.87				0.779	0.07		pCi/g
789UMR-TP05-3654-01	160-39298-8	Thorium-232	10/29/2020	25.4				2.36	0.06		pCi/g
789UMR-TP05-3654-01	160-39298-8	Uranium-233/234	9/29/2020	37.8	F	J	J	3.58	0.20		pCi/g
789UMR-TP05-3654-01	160-39298-8	Uranium-235/236	9/29/2020	1.66				0.419	0.19		pCi/g
789UMR-TP05-3654-01	160-39298-8	Uranium-238	9/29/2020	37.7	F	J	J	3.57	0.19		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3654-01	160-39298-8	Actinium 228	10/2/2020	220				22.6	1.64		pCi/g
789UMR-TP05-3654-01	160-39298-8	Bismuth-212	10/2/2020	233				25.8	7.21		pCi/g
789UMR-TP05-3654-01	160-39298-8	Bismuth-214	10/2/2020	60				6.4	1.08		pCi/g
789UMR-TP05-3654-01	160-39298-8	Cesium-137	10/2/2020	-0.372	U		U	0.535	0.88		pCi/g
789UMR-TP05-3654-01	160-39298-8	Lead-212	10/2/2020	229				29.7	0.97		pCi/g
789UMR-TP05-3654-01	160-39298-8	Lead-214	10/2/2020	62.8				6.6	1.04		pCi/g
789UMR-TP05-3654-01	160-39298-8	Potassium-40	10/2/2020	2.43	U		U	3.79	6.25		pCi/g
789UMR-TP05-3654-01	160-39298-8	Protactinium-234	10/2/2020	0.459	U		U	0.656	6.06		pCi/g
789UMR-TP05-3654-01	160-39298-8	Radium-224	10/2/2020	229				29.7	0.97		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP05-3654-01	160-39298-8	Radium-226	10/2/2020	60	G			6.4	1.08		pCi/g
789UMR-TP05-3654-01	160-39298-8	Radium-228	10/2/2020	220				22.6	1.64		pCi/g
789UMR-TP05-3654-01	160-39298-8	Thallium-208	10/2/2020	75.8				7.93	0.65		pCi/g
789UMR-TP05-3654-01	160-39298-8	Thorium-234	10/2/2020	17.4	U	UJ	UJ	3.51	26.6		pCi/g

Analytical Method 6020A

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0006-01	160-39298-9	Thorium	9/29/2020	7.9		J	J		1.1	0.75	mg/Kg
789UMR-TP06-0006-01	160-39298-9	Thorium	9/29/2020	0.86		J	J		0.12	0.083	pCi/g
789UMR-TP06-0006-01	160-39298-9	U-233	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP06-0006-01	160-39298-9	U-234	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP06-0006-01	160-39298-9	U-235	9/30/2020	0.028	J	J	J		0.03	0.017	mg/Kg
789UMR-TP06-0006-01	160-39298-9	U-236	9/30/2020	0.017					0.03	0.017	mg/Kg
789UMR-TP06-0006-01	160-39298-9	U-238	9/30/2020	3.5	B				0.03	0.017	mg/Kg

Analytical Method A-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0006-01	160-39298-9	Thorium-228	10/29/2020	3.06				0.401	0.11		pCi/g
789UMR-TP06-0006-01	160-39298-9	Thorium-230	10/29/2020	1.36				0.233	0.05		pCi/g
789UMR-TP06-0006-01	160-39298-9	Thorium-232	10/29/2020	3.27				0.416	0.05		pCi/g
789UMR-TP06-0006-01	160-39298-9	Uranium-233/234	9/29/2020	1.84	F	J	J	0.289	0.09		pCi/g
789UMR-TP06-0006-01	160-39298-9	Uranium-235/236	9/29/2020	0.13				0.0749	0.06		pCi/g
789UMR-TP06-0006-01	160-39298-9	Uranium-238	9/29/2020	2.27	F	J	J	0.332	0.1		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0006-01	160-39298-9	Actinium 228	10/2/2020	10.8				1.36	0.44		pCi/g
789UMR-TP06-0006-01	160-39298-9	Bismuth-212	10/2/2020	11.3				3.11	2.33		pCi/g
789UMR-TP06-0006-01	160-39298-9	Bismuth-214	10/2/2020	3.59				0.654	0.37		pCi/g
789UMR-TP06-0006-01	160-39298-9	Cesium-137	10/2/2020	-0.161	U		U	0.252	0.41		pCi/g
789UMR-TP06-0006-01	160-39298-9	Lead-212	10/2/2020	11.5				1.32	0.37		pCi/g
789UMR-TP06-0006-01	160-39298-9	Lead-214	10/2/2020	3.31				0.561	0.39		pCi/g
789UMR-TP06-0006-01	160-39298-9	Potassium-40	10/2/2020	16.8				3.11	1.17		pCi/g
789UMR-TP06-0006-01	160-39298-9	Protactinium-234	10/2/2020	0.0543	U		U	0.748	2.01		pCi/g
789UMR-TP06-0006-01	160-39298-9	Radium-224	10/2/2020	11.5				1.32	0.37		pCi/g

Analytical Method GA-01-R

Sample ID	Lab Sample ID	Chemical Name	Anal Date	Final Result	Lab Qual	Val Qual	Final Qual	Total Uncertainty	MDC	MDL	Units
789UMR-TP06-0006-01	160-39298-9	Radium-226	10/2/2020	3.59				0.654	0.37		pCi/g
789UMR-TP06-0006-01	160-39298-9	Radium-228	10/2/2020	10.8				1.36	0.44		pCi/g
789UMR-TP06-0006-01	160-39298-9	Thallium-208	10/2/2020	4.18				0.555	0.20		pCi/g
789UMR-TP06-0006-01	160-39298-9	Thorium-234	10/2/2020	0.562	U	UJ	UJ	4.31	7.17		pCi/g