District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources Department

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 24, 2018
Submit to appropriate OCD District office

Incident ID	NRM2025448240
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Responsible Party Philana Thompson/AGUA MOSS	OGRID 247130
Contact Name Philana Thompson	Contact Telephone 5054861171
Contact email pthompson@merrion.bz	Incident # *(assigned by OCD)*
Contact mailing address 610 Reilly Ave Farmington, NM 87401	

Location of Release Source

Latitude 36.7579498 Longitude -108.0734253
(NAD 83 in decimal degrees to 5 decimal places)

Site Name Sunco Disposal #1	Site Type Surface Waste Facility (NM1-9)
Date Release Discovered: Unknown, prior to 2/20/2012	API# *(if applicable) 30-045-28653*

Unit Letter	Section	Township	Range	County
E	2	29N	12W	San Juan

Surface Owner: ☐ State ☐ Federal ☐ Tribal ☒ Private (*Name: Agua Moss, LLC*)

Nature and Volume of Release

Material(s) Released (Select all that apply and attach calculations or specific justification for the volumes provided below)

☐ Crude Oil	Volume Released (bbls)	Volume Recovered (bbls)
☐ Produced Water	Volume Released (bbls)	Volume Recovered (bbls)
	Is the concentration of dissolved chloride in the produced water >10,000 mg/l?	☐ Yes ☐ No
☐ Condensate	Volume Released (bbls)	Volume Recovered (bbls)
☐ Natural Gas	Volume Released (Mcf)	Volume Recovered (Mcf)
☒ Other (describe)	Volume/Weight Released (provide units) Unknown	Volume/Weight Recovered (provide units) Unknown

Cause of Release
Permitted Surface Waste Management Facility under NM-01-0009 Approved for use 1/27/1997 for Sunco Trucking Water Disposal Company. The nature and extent of what was placed in the landfarm is unknown, however, per permit conditions it was related to activities that took place for the Sunco Disposal #1 UICI-5 operations and no other outside waste was placed in the landfarm. Agua Moss, LLC has not utilized the landfarm since taking over operations 2/20/2012.

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State of New Mexico
Oil Conservation Division

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Was this a major release as defined by 19.15.29.7(A) NMAC? ☐ Yes ☒ No	If YES, for what reason(s) does the responsible party consider this a major release?
If YES, was immediate notice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)?	

Initial Response

The responsible party must undertake the following actions immediately unless they could create a safety hazard that would result in injury

☒ The source of the release has been stopped.
☒ The impacted area has been secured to protect human health and the environment.
☒ Released materials have been contained via the use of berms or dikes, absorbent pads, or other containment devices.
☒ All free liquids and recoverable materials have been removed and managed appropriately.

If all the actions described above have not been undertaken, explain why:

Per 19.15.29.8 B. (4) NMAC the responsible party may commence remediation immediately after discovery of a release. If remediation has begun, please attach a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred within a lined containment area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Philana Thompson — Title: HSE & Regulatory Compliance Specialist

Signature: [signature] — Date: 9/8/2020

email: pthompson@merrion.bz — Telephone: 505-486-1171

OCD Only

Received by: Ramona Marcus — Date: 9/10/2020

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State of New Mexico
Oil Conservation Division

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Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	83 (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☒ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☒ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☒ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☒ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☒ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☒ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☒ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☒ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☒ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☒ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☒ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☒ Field data
- ☒ Data table of soil contaminant concentration data
- ☒ Depth to water determination
- ☒ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☒ Photographs including date and GIS information
- ☒ Topographic/Aerial maps
- ☒ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

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State of New Mexico
Oil Conservation Division

Incident ID	NRM2025448240
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I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Printed Name: Philana Thompson

Title: HSE & Regulatory Compliance

Signature:

Date: 9/8/2020

email: pthompson@merrion.bz

Telephone: 505-486-1171

OCD Only

Received by: Ramona Marcus

Date: 9/10/2020

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NRM2025448240

Agua Moss

August 31, 2020

SUBJECT: PERMIT NM1-9-0, VADOSE ZONE RELEASE

Mr. Smith,

Agua Moss has been in the process of closing the landfarm at the Sunco facility for the past five years. Since Agua Moss took over operations in February 2012, there has been no new material accepted into the landfarm.

There have been soil sample results from the vadose zone indicating that a possible release has occurred. This is not a typical case because there is not a single instance to refer to as the cause of the release. All of the vadose zone sampling data since 2015 is compiled and analyzed in the attached report. The beginning date of 2015 was chosen because that is when the sampling procedure of using bail holes was implemented, and more consistent results followed. The sampling data is compared to the remediation standard per Table 1 of 19.15.29.12 NMAC (groundwater depth is evaluated in Appendix A), other constituents are compared to Table 1 of 40 CFR 261.24 and NMED Soil Screening Levels. All of the samples are below the standards; results are summarized in Tables 1 and 2 in the attached report.

Since this case differs from the typical release, we have applied and followed the release rule as best as we can according to the context of the situation. In the attached report, you will find our proposed work plan to evaluate the vadose zone exceedances per rule 19.15.29 NMAC. Under "Site Assessment" part 11, subsection A, paragraph 5b, horizontal delineation can be expressed in Figure 1, which maps out the location of all of the samples. The work plan proposes a method to delineate vertically the samples that exceeded 600 mg/kg chloride per paragraph 5c if that applies to this case since it is not a produced water spill.

Please advise if the work plan is suitable for this case. We will provide any additional information you need. If you have any questions or concerns, please contact me.

Sincerely,

Agua Moss

Shacie Murray
Engineer
shacie@merrion.bz

Attachments:
Agua Moss Surface Waste Management Facility Vadose Zone Release Assessment Workplan, Rule Engineering, August 31, 2020

Agua Moss Surface Waste Management Facility (NM1-9-0) Vadose Zone Release Assessment Workplan

NW ¼, Section 2, Township 29 North, Range 12 West
San Juan County, New Mexico

August 31, 2020

Prepared for:
Agua Moss LLC
P. O. Box 600
Farmington, New Mexico 87499

Prepared by:
Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

Rule Engineering, LLC
Solutions to Regulations for Industry

Agua Moss LLC
Surface Waste Management Facility (NM1-9-0)
Vadose Zone Release Assessment Workplan

Prepared for:

Agua Moss LLC
P.O. Box 600
Farmington, New Mexico 87499

Prepared by:

Rule Engineering, LLC
501 Airport Drive, Suite 205
Farmington, New Mexico 87401

Heather M. Woods

Heather M. Woods, P.G., Area Manager

August 31, 2020

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Figure 1 Quarterly Monitoring and E5 Response Sample Location Map

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Appendix A Remediation Standards Determination and Documentation
Appendix B Laboratory Analytical Reports

1.0 Introduction

This release assessment workplan summarizes vadose zone sampling conducted at the Agua Moss Surface Waste Management Facility, hereinafter the "Facility", and details proposed sampling procedures for delineation of chloride concentrations reported above 600 milligrams per kilogram (mg/kg) in accordance with 19.15.29 New Mexico Administrative Code (NMAC). Quarterly monitoring of the vadose zone is performed according to Subsection F of 19.15.36.15 NMAC and the *Facility Closure Plan: Permit NM1-9-0* dated June 1, 2015, which was approved by the New Mexico Oil Conservation Division (NMOCD) with amendments on July 1, 2015. A release response sampling event was performed in accordance with Paragraph (5) of Subsection E of 19.15.36.15 NMAC to address constituents of concern detected within the vadose zone during quarterly monitoring.

2.0 Remediation Standards Determination

The remediation standards for the site determined per 19.15.29 NMAC are selected by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several additional factors outlined in Paragraph (4) of Subsection (C) of 19.15.29.12 NMAC. A summary of the determination and supporting documents are included in Appendix A.

Closure criteria for the soils impacted at the release location are determined by the *"51 feet to 100 feet"* category of Table 1 of 19.15.29.12 NMAC. These remedial standards are as follows:

- 10 milligrams per kilogram (mg/kg) benzene per USEPA Methods 8021B or 8260B.
- 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B;
- 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015M;
- 2,500 mg/kg total petroleum hydrocarbons (TPH) as GRO, DRO, and mineral range organics (MRO) per USEPA Method 8015M; and
- 10,000 mg/kg chloride per United States Environmental Protection Agency (USEPA) Methods 300.0 or SM 4500-Cl B.

Per Subsection (c) of Paragraph (5) of Subsection A 19.15.29.11 NMAC, chlorides will be vertically delineated to 600 mg/kg.

For constituents that appear on Table 1 of 40 Code of Federal Regulations (CFR) 261.24(b), the constituents are remediated according to 40 CFR 261.24. Table 1 of 40 CFR 261.24 presents the maximum concentrations of contaminants for the toxicity characteristic as determined by USEPA Method 1311, Toxicity Characteristic Leaching Procedure (TCLP). Section 1.2 of USEPA Method 1311 allows for the use of total

analysis, such as was performed for the samples at this site, if the analysis demonstrates that individual contaminants are not present in the waste, or present in levels that could not possibly exceed the regulatory threshold. The maximum theoretical leachate concentration is 1/20 of the total concentration per 60 Federal Register (FR) 66389, December 21, 1995. For ease of use, the applicable concentrations from Table 1 of 40 CFR 261.24 have been multiplied by 20 for comparison to analytical results in the analytical summary tables (Tables 1 and 2).

For constituents listed in Subsections A and B of 20.6.2.3103 NMAC, concentrations are compared to the New Mexico Environment Department Soil Screening Level (NMED SSL) for Residential Soils per the NMED *Risk Assessment Guidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessments,* February 2019 (Revision 2, 6/19/19). Applicable NMED SSL concentrations for constituents listed in Subsections A and B of 20.6.2.3103 NMAC are provided in the analytical summary tables (Tables 1 and 2).

3.0 Field Activities

Agua Moss has performed quarterly monitoring since assumption of operation of the Facility in February 2012. Field sampling methods for the vadose zone were modified in the 1st Quarter of 2015 to the use of bail holes to reduce apparent cross contamination of the vadose zone soil by treatment zone soil. This resulted in more consistent and reliable data from quarterly sampling that is suitable for analysis in this report.

Monitoring for the 1st and 2nd Quarter of 2015 was performed by Envirotech Inc. (Envirotech). Monitoring for the 3rd Quarter 2015 to 2nd Quarter 2016 was performed by Terracon Consultants, Inc. (Terracon). Rule Engineering, LLC (Rule) assumed quarterly monitoring in the 3rd Quarter of 2016. Sampling frequency and laboratory analysis was performed according to the *Facility Closure Plan* with some irregularities. These irregularities include the collection of more samples than required in the 2nd Quarters of 2015 and 2016 as well as occasional inconsistencies in constituent analysis.

Additionally, a release response sampling event was performed on July 1, 2019, to address detections of constituents of concern in the vadose zone during previous quarterly monitoring events in accordance with Paragraph (5) of Subsection E of 19.15.36.15 NMAC (E5 Response).

4.0 Soil Sampling

Sample collection was performed utilizing a backhoe to scrape an area of treatment zone soils away from the sampling area to minimize cross contamination potential. A smaller area was then excavated into the vadose zone to depths ranging from 3 to 5 feet below ground surface (bgs) where a discrete sample was collected. Soil samples were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Envirotech Analytical Laboratory in Farmington, New Mexico or Hall Environmental Analysis Laboratory in Albuquerque, New Mexico.

A compilation of the quarterly monitoring sample locations and E5 Response sample locations is illustrated on Figure 1.

5.0 Laboratory Analytical Results and Evaluation

Laboratory analytical results are compared to (1) remediation Standards per Table 1 of 19.15.29.12 NMAC, (2) Table 1 of 40 CFR 261.24, and (3) NMED SSLs for Residential Soils as appropriate. Laboratory analytical results for quarterly monitoring are summarized in Table 1 and for E5 Response sampling in Table 2. Analytical laboratory reports are included in Appendix B.

Laboratory analytical results report all constituent concentrations below the applicable remediation standard, toxicity characteristic concentration, or NMED SSL for all constituents. Laboratory reporting limits are below the applicable standards. Sulfate, alkalinity, pH, and radioactivity (as Radium-226 and Radium-228) do not have defined remediation standards, toxicity characteristic concentrations, or NMED SSLs. As the alkalinity and pH values greater than 7 standard units indicate, sulfates are not creating acidic soils and concentrations are not sufficient to impact the groundwater present at greater than 50 feet bgs. Background radioactivity as radium-226 and radium-228 are defined in the approved Facility Closure Plan for the Facility as 3.5395 picoCuries per gram (pCi/g) and 2.004 piC/g, respectively. Laboratory analytical results report all Radium-226 and Radium-228 below these background concentrations.

Chloride concentrations are reported above 600 mg/kg for vertical delineation in nine samples with exceedance concentrations ranging from 610 to 1,900 mg/kg. These samples are indicated in red font on Figure 1 and bold font with blue shading on Tables 1 and 2.

6.0 Proposed Chloride Delineation

Proposed vertical delineation of chlorides consists of the advancement of a test pit in each of the nine locations with chloride concentrations exceeding 600 mg/kg. Each test pit will be excavated using a backhoe and performed in the same manner of quarterly monitoring sampling. An area of treatment zone soils will be scraped away from the sampling area to minimize the potential of cross contamination. Samples will be collected at approximately 2-foot intervals to the total depth of the test pit which will extend at least one foot below the original sample depth.

Samples will be field screened for electrical conductivity of a 4:1 distilled water/soil solution to estimate relative chloride concentrations. Excavation and sampling will continue until electrical conductivity indicates sufficiently decreasing chloride concentrations or to the limits of the equipment.

At least two samples will be selected from each test pit for laboratory analysis. The two samples will include the sample interval exhibiting the highest electrical conductivity and the sample from the bottom of the test pit. Soil samples will be placed into laboratory

supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. Each sample will be analyzed for chloride using USEPA Method 300.0.

Based on laboratory results, additional delineation will be performed if warranted or a closure report summarizing the delineation procedures and results will be submitted to the NMOCD.

7.0 Closure and Limitations

This workplan has been prepared for the exclusive use of Agua Moss and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with Agua Moss. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.

Tables

Rule

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Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose Cell 1-1	Cell #1 Vadose Cell 1-3	Cell #1 Vadose Cell 1-4.2	Cell #1 Vadose Cell 1-4.3	Cell #2 North Vadose Cell 2N-4	Cell #2 North Vadose Cell 2N-5	Cell #2N Vadose Cell 2N-6	Cell #2 North Vadose Cell 2N-7	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		3 to 4	3 to 4	3 to 4	4 to 5	4 to 5	4 to 5	4 to 5	4 to 5	4 to 5	4 to 5	4 to 5			
TPH (GRO)	mg/kg	<9.97	<9.98	<9.97	<9.91	<9.48	<9.82	<9.84	<9.94	<9.90	<9.59	<9.98			
TPH (DRO)	mg/kg	<30.0	<30.0	<29.9	<39.0	<39.4	<38.5	91.3	<39.2	41.7	<38.9	<39.6			
TPH (MRO)	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
TPH as GRO+DRO	mg/kg	ND	ND	ND	ND	ND	ND	91.3	ND	41.7	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	<34.7	39.5	52.0	<35.8	<36.0	<33.2	<32.8	<33.4	<33.2	<34.4	<33.8			2,500 mg/kg
Benzene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.09	0.12	<0.10	0.14	<0.10	<0.10	0.13	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.09	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.10	<0.10	<0.10	<0.10	<0.09	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.10	<0.10	<0.10	0.49	<0.09	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	0.49	ND	0.12	ND	0.14	ND	ND	0.13			50 mg/kg
Fluoride	mg/kg	--	--	--	--	--	--	--	--	--	--	--		4,690 mg/kg	
Chloride	mg/kg	--	--	--	**788**	573	457	557	289	219	342	384		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	--	--	--	--	--	--	--	--	--	--	--		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	--	--	--	--	--	--	--	--	--	--	--		125,000 mg/kg	
Sulfate	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
Alkalinity	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	--	--	--	--	--	--	--	--	--	--	--		23.8 mg/kg	
Arsenic	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		13,000,000 mg/kg	
Chromium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	--	--	--	--	--	--	--	--	--	--	--		3,130 mg/kg	
Iron	mg/kg	--	--	--	--	--	--	--	--	--	--	--		54,800 mg/kg	
Lead	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Manganese	mg/kg	--	--	--	--	--	--	--	--	--	--	--		10,500 mg/kg	
Potassium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Selenium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		7,820,000 mg/kg	
Uranium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		234 mg/kg	
Zinc	mg/kg	--	--	--	--	--	--	--	--	--	--	--		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

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Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	5/20/2015	5/20/2015	5/20/2015	5/20/2015	9/28/2015	9/28/2015	9/28/2015	12/7/2015	12/7/2015	12/7/2015	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		4 to 5	4 to 5	4 to 5	4 to 5	3	3	3	3	3	3			
		Cell #2 South Vadose Cell 2S-3	Cell #2S Vadose Cell 2S-4	Cell #2S Vadose Cell 2S-5	Cell #2 South Vadose Cell 2S-6	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	<9.48	11.1	<9.95	<9.96	<4.7	<4.8	<5.0	<4.8	<4.8	<4.9			
TPH (DRO)	mg/kg	<39.4	<39.4	<38.5	<38.0	<10	<9.7	<9.6	<10	<9.7	<9.6			
TPH (MRO)	mg/kg	--	--	--	--	<50	<49	<48	<50	<49	<48			
TPH as GRO+DRO	mg/kg	ND	11.1	ND	ND	ND	ND	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	<36.5	<32.4	<35.6	<33.6	ND	ND	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.09	0.14	<0.10	<0.10	<0.047	<0.048	<0.050	<0.048	<0.048	<0.049	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.09	<0.10	<0.10	<0.10	<0.047	<0.048	<0.050	<0.048	<0.048	<0.049		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.09	<0.10	<0.10	<0.10	<0.047	<0.048	<0.050	<0.048	<0.048	<0.049		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.09	<0.10	<0.10	<0.10	<0.094	<0.095	<0.10	<0.095	<0.097	<0.098		871 mg/kg	
Total BTEX	mg/kg	ND	0.14	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	--	--	--	--	--	--	--	26	1.1	2		4,690 mg/kg	
Chloride	mg/kg	421	542	282	276	--	--	--	230	270	140		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	--	--	--	--	--	--	--	<0.30	<0.30	<0.30		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	--	--	--	--	--	--	--	0.88	8.8	<0.30		125,000 mg/kg	
Sulfate	mg/kg	--	--	--	--	--	--	--	410	660	160			
Alkalinity	mg/kg	--	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	--	--	--	--	--	--	--	<0.033	<0.032	<0.032		23.8 mg/kg	
Arsenic	mg/kg	--	--	--	--	--	--	--	4.1	<2.4	2.8	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	--	--	--	--	--	--	--	140	170	110	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	--	--	--	--	--	--	--	<0.099	<0.098	<0.10	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	--	--	--	--	--	--	--	55,000	37,000	11,000		13,000,000 mg/kg	
Chromium	mg/kg	--	--	--	--	--	--	--	7.3	6.1	2.2	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	--	--	--	--	--	--	--	7.0	5.9	2.5		3,130 mg/kg	
Iron	mg/kg	--	--	--	--	--	--	--	12,000	11,000	6,300		54,800 mg/kg	
Lead	mg/kg	--	--	--	--	--	--	--	2.4	3.7	2.3	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	--	--	--	--	--	--	--	5,400	4,500	2,800		15,600,000 mg/kg	
Manganese	mg/kg	--	--	--	--	--	--	--	140	180	160		10,500 mg/kg	
Potassium	mg/kg	--	--	--	--	--	--	--	1,800	1,500	500		15,600,000 mg/kg	
Selenium	mg/kg	--	--	--	--	--	--	--	<2.5	<2.4	<2.5	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	--	--	--	--	--	--	--	<0.25	<0.24	<0.25	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	--	--	--	--	--	--	--	810	470	360		7,820,000 mg/kg	
Uranium	mg/kg	--	--	--	--	--	--	--	<4.9	<4.9	<5.0		234 mg/kg	
Zinc	mg/kg	--	--	--	--	--	--	--	25	23	13		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

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Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date / Sample Depth (feet bgs)	Units	Cell #1 Vadose 1/28/2016 3	Cell #2 North Vadose 1/28/2016 3	Cell #2 South Vadose 1/28/2016 3	Cell #1 Vadose Cell 1-1 6/28/2016 3	Cell #1 Vadose Cell 1-2 6/28/2016 3	Cell #1 Vadose Cell 1-3 6/28/2016 3	Cell #1 Vadose Cell 1-4 6/28/2016 3	Cell #2 North Vadose Cell 2N-1 6/28/2016 3	Cell #2 North Vadose Cell 2N-2 6/28/2016 3	Cell #2 North Vadose Cell 2N-3 6/28/2016 3	Cell #2 North Vadose Cell 2N-4 6/28/2016 3	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
TPH (GRO)	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
TPH (DRO)	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
TPH (MRO)	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
TPH as GRO+DRO	mg/kg	--	--	--	--	--	--	--	--	--	--	--			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	<20	1,700	<20	<19	<18	<20	<19	<19	<18	<19	<19			2,500 mg/kg
Benzene	mg/kg	<0.049	<0.048	<0.048	<0.024	<0.024	<0.025	<0.023	<0.025	<0.023	<0.025	<0.024	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.049	<0.048	<0.048	<0.047	<0.048	<0.049	<0.046	<0.049	<0.047	<0.050	<0.049		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.049	<0.048	<0.048	<0.047	<0.048	<0.049	<0.046	<0.049	<0.047	<0.050	<0.049		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.098	<0.095	<0.096	<0.094	<0.096	<0.098	<0.091	<0.099	<0.093	<0.10	<0.097		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	--	--	--	--	--	--	--	--	--	--	--		4,690 mg/kg	
Chloride	mg/kg	--	--	--	280	**870**	59	270	180	320	**1,000**	91		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	--	--	--	--	--	--	--	--	--	--	--		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	--	--	--	--	--	--	--	--	--	--	--		125,000 mg/kg	
Sulfate	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
Alkalinity	mg/kg	--	--	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	--	--	--	--	--	--	--	--	--	--	--		23.8 mg/kg	
Arsenic	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		13,000,000 mg/kg	
Chromium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	--	--	--	--	--	--	--	--	--	--	--		3,130 mg/kg	
Iron	mg/kg	--	--	--	--	--	--	--	--	--	--	--		54,800 mg/kg	
Lead	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Manganese	mg/kg	--	--	--	--	--	--	--	--	--	--	--		10,500 mg/kg	
Potassium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Selenium	mg/kg	--	--	--	--	--	--	--	--	--	--	--	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	--	--	--	--	--	--	--	--	--	--	--	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		7,820,000 mg/kg	
Uranium	mg/kg	--	--	--	--	--	--	--	--	--	--	--		234 mg/kg	
Zinc	mg/kg	--	--	--	--	--	--	--	--	--	--	--		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

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Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	6/28/2016	6/28/2016	6/28/2016	6/28/2016	9/16/2016	9/16/2016	9/16/2016	12/14/2016	12/14/2016	12/14/2016	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		3	3	3	3	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6			
		Cell #2 South Vadose Cell 2S-1	Cell #2 South Vadose Cell 2S-2	Cell #2 South Vadose Cell 2S-3	Cell #2 South Vadose Cell 2S-4	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	--	--	--	--	<4.8	<4.7	<5.0	<0.98	<0.97	<0.94			
TPH (DRO)	mg/kg	--	--	--	--	<9.3	<9.7	<9.3	<1.9	<1.8	<1.8			
TPH (MRO)	mg/kg	--	--	--	--	<47	<49	<46	<50	<50	<49			
TPH as GRO+DRO	mg/kg	--	--	--	--	ND	ND	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	<20	<20	<19	<19	ND	ND	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.025	<0.025	<0.024	<0.024	<0.024	<0.024	<0.025	<0.0054	<0.0054	<0.0052	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.049	<0.050	<0.048	<0.048	<0.048	<0.047	<0.050	<0.0048	<0.0048	<0.0047		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.049	<0.050	<0.048	<0.048	<0.048	<0.047	<0.050	<0.0046	<0.0046	<0.0045		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.098	<0.099	<0.095	<0.095	<0.095	<0.095	<0.099	<0.014	<0.014	<0.013		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	--	--	--	--	--	--	--	15	0.94	1.5		4,690 mg/kg	
Chloride	mg/kg	150	170	98	110	--	--	--	**640**	**730**	140		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	--	--	--	--	--	--	--	<0.16	<0.16	<0.16		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	--	--	--	--	--	--	--	1.8	1.9	0.93		125,000 mg/kg	
Sulfate	mg/kg	--	--	--	--	--	--	--	250	48	200			
Alkalinity	mg/kg	--	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	--	--	--	--	--	--	--	0.015 J	0.014 J	0.0056 J		23.8 mg/kg	
Arsenic	mg/kg	--	--	--	--	--	--	--	2.4 J	3.1	2.1 J	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	--	--	--	--	--	--	--	110	150	110	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	--	--	--	--	--	--	--	<0.062	<0.063	<0.061	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	--	--	--	--	--	--	--	15,000	48,000	15,000		13,000,000 mg/kg	
Chromium	mg/kg	--	--	--	--	--	--	--	7.2	7.5	2.6	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	--	--	--	--	--	--	--	5.4	7.0	1.8		3,130 mg/kg	
Iron	mg/kg	--	--	--	--	--	--	--	13,000	15,000	5,400		54,800 mg/kg	
Lead	mg/kg	--	--	--	--	--	--	--	3.2	3	1.7	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	--	--	--	--	--	--	--	4,200	5,000	1,800		15,600,000 mg/kg	
Manganese	mg/kg	--	--	--	--	--	--	--	170	200	97		10,500 mg/kg	
Potassium	mg/kg	--	--	--	--	--	--	--	1,500	1,600	610		15,600,000 mg/kg	
Selenium	mg/kg	--	--	--	--	--	--	--	<1.8	<1.8	<1.7	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	--	--	--	--	--	--	--	<0.061	<0.062	<0.060	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	--	--	--	--	--	--	--	490	260	230		7,820,000 mg/kg	
Uranium	mg/kg	--	--	--	--	--	--	--	<1.1	<1.1	<1.1		234 mg/kg	
Zinc	mg/kg	--	--	--	--	--	--	--	23	23	9.5		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	3/14/2017	3/14/2017	3/14/2017	6/12/2017	6/12/2017	6/12/2017	9/1/2017	9/1/2017	9/1/2017	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6			
		Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	<4.7	<4.6	<4.7	<4.8	<4.9	<4.8	<4.7	<4.8	<4.7			
TPH (DRO)	mg/kg	<9.8	<9.7	<9.6	18	<9.4	<9.8	<9.5	<9.5	<10			
TPH (MRO)	mg/kg	<49	<49	<48	75	<47	<49	<48	<47	<50			
TPH as GRO+DRO	mg/kg	ND	ND	ND	18	ND	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	ND	ND	ND	93	ND	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.024	<0.023	<0.023	<0.024	<0.025	<0.024	<0.023	<0.024	<0.023	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.047	<0.046	<0.047	<0.048	<0.049	<0.048	<0.047	<0.048	<0.047		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.047	<0.046	<0.047	<0.048	<0.049	<0.048	<0.047	<0.048	<0.047		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.095	<0.092	<0.093	<0.096	<0.099	<0.097	<0.093	<0.096	<0.094		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	--	--	--	--	--	--	--	--	--		4,690 mg/kg	
Chloride	mg/kg	--	--	--	250	300	57	--	--	--		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	--	--	--	--	--	--	--	--	--		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	--	--	--	--	--	--	--	--	--		125,000 mg/kg	
Sulfate	mg/kg	--	--	--	--	--	--	--	--	--			
Alkalinity	mg/kg	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	--	--	--	--	--	--	--	--	--		23.8 mg/kg	
Arsenic	mg/kg	--	--	--	--	--	--	--	--	--	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	--	--	--	--	--	--	--	--	--	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	--	--	--	--	--	--	--	--	--	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	--	--	--	--	--	--	--	--	--		13,000,000 mg/kg	
Chromium	mg/kg	--	--	--	--	--	--	--	--	--	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	--	--	--	--	--	--	--	--	--		3,130 mg/kg	
Iron	mg/kg	--	--	--	--	--	--	--	--	--		54,800 mg/kg	
Lead	mg/kg	--	--	--	--	--	--	--	--	--	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Manganese	mg/kg	--	--	--	--	--	--	--	--	--		10,500 mg/kg	
Potassium	mg/kg	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Selenium	mg/kg	--	--	--	--	--	--	--	--	--	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	--	--	--	--	--	--	--	--	--	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	--	--	--	--	--	--	--	--	--		7,820,000 mg/kg	
Uranium	mg/kg	--	--	--	--	--	--	--	--	--		234 mg/kg	
Zinc	mg/kg	--	--	--	--	--	--	--	--	--		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
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BTEX - benzene, ethylbenzene, toluene, and xylene
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1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

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*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

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Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	12/7/2017	12/7/2017	12/7/2017	3/6/2018	3/6/2018	3/6/2018	6/11/2018	6/11/2018	6/11/2018	8/15/2018	8/15/2018	8/15/2018	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6			
		Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	<4.9	<4.9	<4.9	<4.8	<4.6	<4.7	<4.9	<4.6	<4.8	<4.7	<4.7	<4.7			
TPH (DRO)	mg/kg	<9.5	<9.6	<9.5	<9.4	<9.9	<9.7	<10	70	<9.9	<9.7	<10	<10			
TPH (MRO)	mg/kg	<48	<48	<47	<47	<50	77	<50	370	<49	<48	<50	<50			
TPH as GRO+DRO	mg/kg	ND	ND	ND	ND	ND	ND	ND	70	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	ND	ND	ND	ND	ND	77	ND	440	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.024	<0.025	<0.025	<0.024	<0.023	<0.024	<0.024	<0.023	<0.024	<0.023	<0.023	<0.024	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.049	<0.049	<0.049	<0.048	<0.046	<0.047	<0.049	<0.046	<0.048	<0.047	<0.047	<0.047		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.049	<0.049	<0.049	<0.048	<0.046	<0.047	<0.049	<0.046	<0.048	<0.047	<0.047	<0.047		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.098	<0.098	<0.099	<0.096	<0.093	<0.094	<0.098	<0.092	<0.097	<0.094	<0.094	<0.094		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	4.5	5.1	1.0	--	--	--	--	--	--	--	--	--		4,690 mg/kg	
Chloride	mg/kg	410	540	330	--	--	--	310	580	63	--	--	--		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	<0.30	<0.30	<0.30	--	--	--	--	--	--	--	--	--		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	19	2.4	0.53	--	--	--	--	--	--	--	--	--		125,000 mg/kg	
Sulfate	mg/kg	680	220	110	--	--	--	--	--	--	--	--	--			
Alkalinity	mg/kg	92	113	66	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	<0.033	<0.032	<0.032	--	--	--	--	--	--	--	--	--		23.8 mg/kg	
Arsenic	mg/kg	<2.4	2.9	<2.5	--	--	--	--	--	--	--	--	--	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	480	540	490	--	--	--	--	--	--	--	--	--	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	<0.098	<0.099	<0.099	--	--	--	--	--	--	--	--	--	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	120,000	66,000	9,600	--	--	--	--	--	--	--	--	--		13,000,000 mg/kg	
Chromium	mg/kg	2.6	5.0	2.6	--	--	--	--	--	--	--	--	--	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	2.4	5.0	3.3	--	--	--	--	--	--	--	--	--		3,130 mg/kg	
Iron	mg/kg	4,700	9,500	7,200	--	--	--	--	--	--	--	--	--		54,800 mg/kg	
Lead	mg/kg	<0.24	0.45	1.7	--	--	--	--	--	--	--	--	--	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	4,800	4,600	2,300	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Manganese	mg/kg	63	150	210	--	--	--	--	--	--	--	--	--		10,500 mg/kg	
Potassium	mg/kg	630	1,200	610	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Selenium	mg/kg	8.9	5.0	<2.5	--	--	--	--	--	--	--	--	--	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	0.82	<0.25	<0.25	--	--	--	--	--	--	--	--	--	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	560	460	210	--	--	--	--	--	--	--	--	--		7,820,000 mg/kg	
Uranium	mg/kg	<4.9	<5.0	<4.9	--	--	--	--	--	--	--	--	--		234 mg/kg	
Zinc	mg/kg	7.2	15	12	--	--	--	--	--	--	--	--	--		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment* , February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

Received by OCD: 9/8/2020 4:24:06 PM

Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	1/9/2019	1/9/2019	1/9/2019	4/9/2019	4/9/2019	4/9/2019	6/5/2019	6/5/2019	6/5/2019	9/23/2019	9/23/2019	9/23/2019	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	5 to 6	4 to 5	4 to 5	4 to 5	4	4	4			
		Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	<4.7	<4.8	<4.7	<5.0	<5.0	<4.9	<5.0	<5.0	<5.0	<4.7	<4.9	<4.9			
TPH (DRO)	mg/kg	<9.6	<9.6	<9.8	<9.7	<9.7	<10	<9.9	<10	<9.7	<9.4	<4.9	<4.9			
TPH (MRO)	mg/kg	<48	<48	<49	<48	<48	<50	<49	65	<48	<47	<46	<51			
TPH as GRO+DRO	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	ND	ND	ND	ND	ND	ND	ND	65	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.023	<0.024	<0.024	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.024	<0.025	<0.025	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.047	<0.048	<0.047	<0.050	<0.050	<0.049	<0.050	<0.050	<0.050	<0.047	<0.049	<0.049		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.047	<0.048	<0.047	<0.050	<0.050	<0.049	<0.050	<0.050	<0.050	<0.047	<0.049	<0.049		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.093	<0.096	<0.095	<0.10	<0.099	<0.098	<0.099	<0.10	<0.10	<0.094	<0.098	<0.099		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	4.8 D	9.9 D	1.9 D	--	--	--	--	--	--	--	--	--		4,690 mg/kg	
Chloride	mg/kg	312	281	271	--	--	--	580	**610**	490	--	--	--		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	2	3	1	--	--	--	--	--	--	--	--	--		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg				--	--	--	--	--	--	--	--	--		125,000 mg/kg	
Sulfate	mg/kg	696	900	90	--	--	--	--	--	--	--	--	--			
Alkalinity	mg/kg	75	114	121	--	--	--	--	--	--	--	--	--			
Mercury	mg/kg	<1	<1	<1	--	--	--	--	--	--	--	--	--		23.8 mg/kg	
Arsenic	mg/kg	4	3	2	--	--	--	--	--	--	--	--	--	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	585	218	72	--	--	--	--	--	--	--	--	--	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	<1	<1	<1	--	--	--	--	--	--	--	--	--	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	87,800 D	9,140 D	18,900	--	--	--	--	--	--	--	--	--		13,000,000 mg/kg	
Chromium	mg/kg	5	6	6	--	--	--	--	--	--	--	--	--	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	4	8	5	--	--	--	--	--	--	--	--	--		3,130 mg/kg	
Iron	mg/kg	5,640	11,200	8,170	--	--	--	--	--	--	--	--	--		54,800 mg/kg	
Lead	mg/kg	5	7	6	--	--	--	--	--	--	--	--	--	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	5,890	4,460	3,090	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Manganese	mg/kg	99	225	155	--	--	--	--	--	--	--	--	--		10,500 mg/kg	
Potassium	mg/kg	923	1,220	1,350	--	--	--	--	--	--	--	--	--		15,600,000 mg/kg	
Selenium	mg/kg	<1	<1	<1	--	--	--	--	--	--	--	--	--	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	<1	<1	<1	--	--	--	--	--	--	--	--	--	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	560	1,100	467	--	--	--	--	--	--	--	--	--		7,820,000 mg/kg	
Uranium	mg/kg	<1	<1	<1	--	--	--	--	--	--	--	--	--		234 mg/kg	
Zinc	mg/kg	19	22	22	--	--	--	--	--	--	--	--	--		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment* , February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

Table 1. Summary of Quarterly Monitoring Laboratory Analytical Results

Collection Date	Units	12/24/2019	12/24/2019	12/24/2019	3/6/2020	3/6/2020	3/6/2020	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)		4	4	4	4	4	4			
		Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose	Cell #1 Vadose	Cell #2 North Vadose	Cell #2 South Vadose			
TPH (GRO)	mg/kg	<4.9	<4.9	<5.0	<4.6	<4.8	<4.8			
TPH (DRO)	mg/kg	<9.6	<9.3	<9.3	<9.9	<9.5	<9.7			
TPH (MRO)	mg/kg	<48	<47	<46	<50	<47	<19			
TPH as GRO+DRO	mg/kg	ND	ND	ND	ND	ND	ND			1,000 mg/kg
Total TPH (GRO+DRO+MRO)†	mg/kg	ND	ND	ND	ND	ND	ND			2,500 mg/kg
Benzene	mg/kg	<0.025	<0.025	<0.025	<0.023	<0.024	<0.024	10.0 mg/kg	17.8 mg/kg	10 mg/kg
Toluene	mg/kg	<0.049	<0.049	<0.050	<0.046	<0.048	<0.048		5,230 mg/kg	
Ethylbenzene	mg/kg	<0.049	<0.049	<0.050	<0.046	<0.048	<0.048		75.1 mg/kg	
Xylenes (total)	mg/kg	<0.099	<0.098	<0.099	<0.092	<0.096	<0.096		871 mg/kg	
Total BTEX	mg/kg	ND	ND	ND	ND	ND	ND			50 mg/kg
Fluoride	mg/kg	4.5	<1.5	2.7	4.2	6.5	4.9		4,690 mg/kg	
Chloride	mg/kg	310	390	100	480	600	250		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite (as N)	mg/kg	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5		7,820 mg/kg	
Nitrogen, Nitrate (as N)	mg/kg	4.7	28	<1.5	<1.5	4.1	<1.5		125,000 mg/kg	
Sulfate	mg/kg	3,700	63	740	1,400	120	300			
Alkalinity	mg/kg	91	100	79	70	100	92			
Mercury	mg/kg	<0.033	<0.033	<0.033	<0.032	<0.034	<0.033		23.8 mg/kg	
Arsenic	mg/kg	<5.0	<5.0	<5.0	<4.8	<4.9	<5.1	100 mg/kg	7.07 mg/kg	
Barium	mg/kg	330	150	110	260	720	400	2,000 mg/kg	15,600 mg/kg	
Cadmium	mg/kg	<0.20	<0.20	<0.20	<0.19	<0.20	<0.20	20.0 mg/kg	70.5 mg/kg	
Calcium	mg/kg	82,000	16,000	3,400	140,000	45,000	38,000		13,000,000 mg/kg	
Chromium	mg/kg	5.6	8.3	1.7	3.5	6.0	2.8	100.0 mg/kg	96.6 mg/kg	
Copper	mg/kg	5.4	9.3	2.6	2.8	5.5	3.1		3,130 mg/kg	
Iron	mg/kg	8,600	16,000	4,800	5,300	11,000	6,400		54,800 mg/kg	
Lead	mg/kg	1.6	4.3	2.4	<0.58	1.4	0.94	100.0 mg/kg	400 mg/kg	
Magnesium	mg/kg	4,600	5,000	1,700	6,100	4,900	3,900		15,600,000 mg/kg	
Manganese	mg/kg	120	270	170	66	220	190		10,500 mg/kg	
Potassium	mg/kg	1,400	1,900	450	900	1,700	690		15,600,000 mg/kg	
Selenium	mg/kg	<5.0	<5.0	<5.0	<4.8	<4.9	<5.1	20.0 mg/kg	391 mg/kg	
Silver	mg/kg	<0.50	<0.50	<0.50	2.4	<0.49	<0.51	100.0 mg/kg	391 mg/kg	
Sodium	mg/kg	540	300	390	840	550	460		7,820,000 mg/kg	
Uranium	mg/kg	<10	<10	<10	<9.6	<9.8	<10		234 mg/kg	
Zinc	mg/kg	16	31	10	9.5	20	12		23,500 mg/kg	

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
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MRO - mineral oil range organics
†Total TPH value per Method 418.1 when no value reported for MRO per Method 8015
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment*, February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

J - Analyte detected below practical quantitation limit
S - % Recovery outside of range due to dilution or matrix
D - Analyte reporting limit increased due to sample matrix

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Table 2. Summary of E5 Response Laboratory Analytical Results

Collection Date	Cell #1 Vadose - 01 7/1/2019	Cell #1 Vadose - 02 7/1/2019	Cell #1 Vadose -03 7/1/2019	Cell #1 Vadose - 04 7/1/2019	Cell #2 North Vadose - 01 7/1/2019	Cell #2 North Vadose - 02 7/1/2019	Cell #2 North Vadose - 03 7/1/2019	Cell #2 North Vadose - 04 7/1/2019	Cell #2 South Vadose - 01 7/1/2019	Cell #2 South Vadose - 02 7/1/2019	Cell #2 South Vadose - 03 7/1/2019	Cell #2 South Vadose - 04 7/1/2019	Units	20:1 Toxicity Charact-eristic*	NMED SSL for Residential Soils**	Remediation Standard***
Sample Depth (feet bgs)	4	4	4	4	4	4	4	4	4	4	4	4				
TPH (GRO)	<4.9	<4.8	<4.9	<5.0	<5.0	<4.9	<4.9	<4.9	<5.0	<5.0	<4.9	<4.9	mg/kg			1,000 mg/kg (GRO/DRO) / 2,500 mg/kg (total)
TPH (DRO)	<9.8	<9.5	<9.8	<9.9	<9.6	<9.7	<9.7	<9.2	<9.9	<9.7	<9.4	<9.6	mg/kg			
TPH(MRO)	<49	<48	<49	<49	<48	<48	<49	<46	<49	<49	<47	<48	mg/kg			
Benzene	<0.025	<0.024	<0.024	<0.025	<0.025	<0.024	<0.025	<0.024	<0.025	<0.025	<0.024	<0.025	mg/kg	10.0 mg/kg	17.8 mg/kg	10 mg/kg benzene / 50 mg/kg total BTEX
Toluene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		5,230 mg/kg	
Ethylbenzene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		75.1 mg/kg	
Xylenes (total)	<0.099	<0.097	<0.098	<0.099	<0.10	<0.097	<0.098	<0.097	<0.099	<0.10	<0.097	<0.099	mg/kg		871 mg/kg	
MTBE	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		975 mg/kg	
Fluoride	5.4	8.0	4.3	3.0	2.3	3.4	1.8	16	2.0	6.0	<1.5	8.7	mg/kg		4,690 mg/kg	
Chloride	490	**1,900**	**700**	280	370	**1,200**	500	400	36	490	65	560	mg/kg		12,000,000 mg/kg	10,000 mg/kg
Nitrogen, Nitrite	<1.5	1.7	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5	mg/kg		7,820 mg/kg	
Nitrogen, Nitrate	2.5	17	<1.5	<1.5	19	2.8	14	<1.5	<1.5	<1.5	<1.5	<1.5	mg/kg		125,000 mg/kg	
pH	7.94	8.06	8.39	8.66	8.16	7.95	8.03	8.42	9.37	8.48	9.09	8.32	su			
Phenols	<0.670	<0.670	<0.670	<0.670	0.724	<0.670	<0.670	<0.670	<0.670	<0.670	<0.670	<0.670	mg/kg		18,500 mg/kg	
Sulfate	1,700	810	700	470	320	120	250	160	110	430	81	900	mg/kg			
Mercury	<0.032	<0.032	<0.033	<0.032	0.065	<0.032	<0.031	<0.031	<0.032	<0.031	<0.032	<0.032	mg/kg	4.0 mg/kg	23.8 mg/kg	
Antimony	<5.0	<5.0	<4.9	<4.8	<5.0	<4.8	<4.8	<4.9	<4.9	<4.9	<4.8	<4.8	mg/kg		31.3 mg/kg	
Arsenic	<5.0	<5.0	<4.9	5.5	<5.0	<4.8	<4.8	<4.9	<4.9	<4.9	<4.8	<4.8	mg/kg	100.0 mg/kg	7.07 mg/kg	
Barium	160	300	770	170	410	290	310	310	250	380	260	220	mg/kg	2,000 mg/kg	15,600 mg/kg	
Beryllium	0.48	0.41	0.36	0.42	0.88	0.67	0.69	0.57	<0.29	0.43	0.38	0.47	mg/kg		156 mg/kg	
Cadmium	<0.20	<0.20	<0.20	<0.19	<0.20	<0.19	<0.19	<0.20	<0.20	<0.20	<0.19	<0.19	mg/kg	20.0 mg/kg	70.5 mg/kg	
Chromium	5.0	3.6	3.4	3.3	11	8.3	8.8	5.7	1.8	3.3	2.7	5.2	mg/kg	100.0 mg/kg	96.6 mg/kg	
Cyanide	<0.250	<0.250	<0.250	<0.250 J6	<0.250	<0.250	<0.250	<0.250	<0.250	<0.250 J3 J6	<0.250	<0.250	mg/kg		11.2 mg/kg	
Copper	4.4	4.3	2.8	2.9	10	6.6	7.3	4.8	2.3	3.0	2.7	3.7	mg/kg		3,130 mg/kg	
Iron	7,800	5,100	5,300	6,500	18,000	14,000	14,000	9,700	4,400	6,500	6,100	8,400	mg/kg		54,800 mg/kg	
Lead	2.5	<0.50	1.2	1.6	4.0	4.0	4.6	2.1	1.5	1.1	1.5	2.8	mg/kg	100.0 mg/kg	400 mg/kg	
Manganese	120	57	79	160	330	250	240	180	180	130	150	150	mg/kg		10,500 mg/kg	
Selenium	<5.0	8.5	<4.9	<4.8	<5.0	<4.8	<4.8	<4.9	<4.9	<4.9	<4.8	<4.8	mg/kg	20.0 mg/kg	391 mg/kg	
Silver	<0.50	1.5	0.55	<0.48	<0.50	<0.48	<0.48	<0.49	<0.49	<0.49	<0.48	<0.48	mg/kg	100.0 mg/kg	391 mg/kg	
Thallium	<5.0	<5.0	<4.9	<4.8	<5.0	<4.8	<4.8	<4.9	<4.9	<4.9	<4.8	<4.8	mg/kg		0.782 mg/kg	
Uranium	<10	<10	<9.9	<9.6	<9.9	<9.7	<9.6	<9.8	<9.8	<9.8	<9.5	<9.7	mg/kg		234 mg/kg	
Zinc	19	12	12	15	41	32	31	22	11	13	15	19	mg/kg		23,500 mg/kg	
PCB's																
Aroclor 1016	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		3.98 mg/kg	
Aroclor 1221	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		1.81 mg/kg	
Aroclor 1232	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		1.86 mg/kg	
Aroclor 1242	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		2.43 mg/kg	
Aroclor 1248	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		2.43 mg/kg	
Aroclor 1254	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		1.14 mg/kg	
Aroclor 1260	<0.024	<0.025	<0.024	<0.025	<0.024	<0.025	<0.024	<0.023	<0.024	<0.024	<0.024	<0.024	mg/kg		2.43 mg/kg	
Carbon Tetrachloride	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	10.0 mg/kg	10.7 mg/kg	
1,2-dichloroethane (EDC)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	10.0 mg/kg	8.32 mg/kg	
1,1-dichloroethylene (1,1-DCE)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	14.0 mg/kg	440 mg/kg	
Tetrachloroethylene (PCE)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	14.0 mg/kg	111 mg/kg	
Trichloroethylene (TCE)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	10.0 mg/kg	6.77 mg/kg	
Methylene chloride	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	<0.15	mg/kg		409 mg/kg	
Chloroform	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	120 mg/kg	5.90 mg/kg	
1,1-dichloroethane	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		78.6 mg/kg	
Ethylene dibromide (EDB)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		0.672 mg/kg	
1,1,1-trichloroethane	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		14,400 mg/kg	
1,1,2-trichloroethane	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		2.61 mg/kg	
1,1,2,2-tetrachloroethane	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg		7.98 mg/kg	
Vinyl chloride	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.049	<0.049	mg/kg	10 mg/kg	0.742 mg/kg	
PAHs																
Naphthalene	<0.23	<0.23	<0.24	<0.25	<0.23	<0.25	<0.25	<0.25	<0.24	<0.24	<0.23	<0.24	mg/kg		49.7 mg/kg	
1-Methylnaphthalene	<0.23	<0.23	<0.24	<0.25	<0.23	<0.25	<0.25	<0.25	<0.24	<0.24	<0.23	<0.24	mg/kg		172 mg/kg	
2-Methylnaphthalene	<0.23	<0.23	<0.24	<0.25	<0.23	<0.25	<0.25	<0.25	<0.24	<0.24	<0.23	<0.24	mg/kg		232 mg/kg	
Benzo-a-pyrene	<0.0091	<0.0093	<0.0095	<0.010	<0.0093	<0.0098	<0.0099	<0.0099	<0.0098	<0.0095	<0.0094	<0.0097	mg/kg		1.12 mg/kg	
Cis-1,2-dichloroethene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		156 mg/kg	
Trans-1,2-dichloroethene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		295 mg/kg	
1,2-dichloropropane (PDC)	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		17.8 mg/kg	
Styrene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		7,260 mg/kg	
1,2-dichlorobenzene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		2,150 mg/kg	
1,4-dichlorobenzene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg	150 mg/kg	1,290 mg/kg	
1,2,4-trichlorobenzene	<0.049	<0.048	<0.049	<0.050	<0.050	<0.049	<0.049	<0.049	<0.050	<0.050	<0.050	<0.050	mg/kg		82.9 mg/kg	
Pentachlorophenol	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	mg/kg	2,000 mg/kg	9.85 mg/kg	
Atrazine	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	<0.333	mg/kg		23.2 mg/kg	
Radioactivity (Radium-226)	2.390 ± 0.425	0.993 ± 0.284	0.501 ± 0.188	1.886 ± 0.376	1.232 ± 0.280	2.016 ± 0.394	0.872 ± 0.266	1.447 ± 0.332	0.482 ± 0.173	1.281 ± 0.320	0.919 ± 0.245	0.929 ± 0.194	pCi/g			
Radioactivity (Radium-228)	1.108 ± 0.411	0.303 ± 0.408	0.667 ± 0.333	0.969 ± 0.379	1.186 ± 0.557	1.122 ± 0.422	1.313 ± 0.381	1.213 ± 0.357	0.884 ± 0.363	0.837 ± 0.487	1.242 ± 0.334	1.202 ± 0.362	pCi/g			

Notes: bgs - below ground surface
NMED SSL - New Mexico Environment Department Soil Screening Level
mg/kg - milligrams per kilogram
mg/L - milligrams per liter
su - standard units
NMOCD - New Mexico Oil Conservation Division
BTEX - benzene, ethylbenzene, toluene, and xylene
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics

1.00 Value exceeds the 20:1 Toxicity Characteristic, NMED SSL, or the remediation standard

<1.0 Value is below the 20:1 Toxicity Characteristic, NMED SSL and remediation standard, but is above the 600 mg/kg delineation concentration for chloride

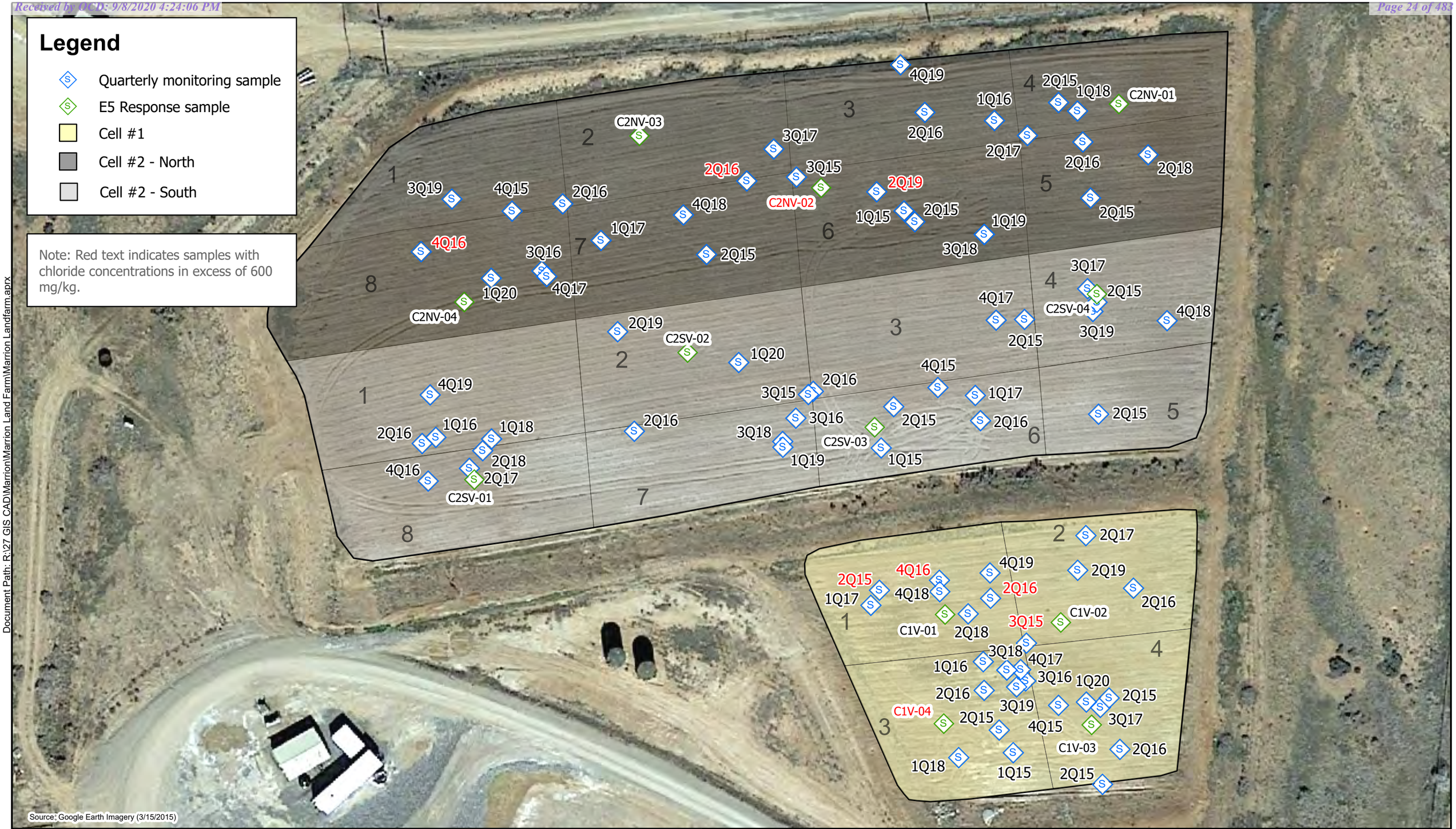
J3 - The associated batch QC was outside the established quality control range for precision
J6 - The sample matrix interfered with the ability to make any accurate determination; spike value is low.
*Per Table 1 of 40 CFR 261.24(b), value multiplied by 20
*New Mexico Environment Department *Risk Assessment Guuidance for Site Investigations and Remediation, Volume I Soil Screening Guidance for Human Health Risk Assessment* , February 2019 (Rev. 2, 6/19/19)
***Per Table 1 of 19.15.29.12 NMAC, based on category "51 feet to 100 feet" depth to groundwater

Figure

Legend

- Quarterly monitoring sample
- E5 Response sample
- Cell #1
- Cell #2 - North
- Cell #2 - South

Note: Red text indicates samples with chloride concentrations in excess of 600 mg/kg.



Source: Google Earth Imagery (3/15/2015)

Rule Engineering, LLC
Solutions to Regulations for Industry

0 45 90 180 270 360 Feet

1:660

Agua Moss

NW1/4-S02-T29N-R12W
San Juan County, NM

Figure 1
Sample Location Map
Agua Moss
Surface Waste Management Facility

Updated: 8/28/2020

Document Path: R:\27 GIS CAD\Marrion\Marrion Land Farm\Marrion Landfarm.aprx

Appendix A

Remediation Standards Determination and Documentation

Closure Criteria Determination
Agua Moss Surface Waste Management Facility

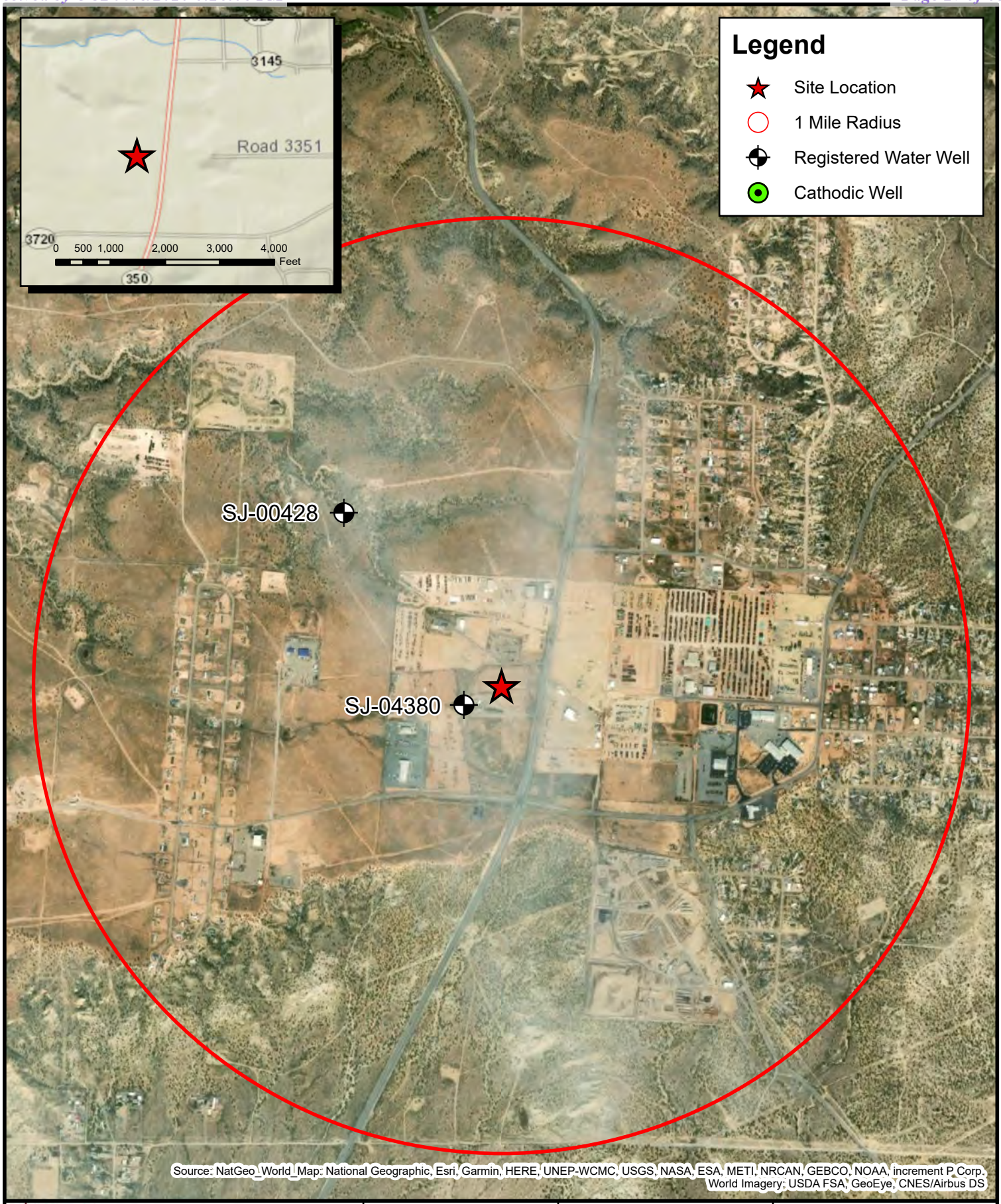
A review of the release site characteristics based on Paragraph (4) of Subsection (C) of 19.15.29 NMAC, concluded that site closure criteria are determined by the ***"51 feet to 100 feet"*** category of Table 1.

The release site characteristics are as follows:

- Depth to groundwater at the site is anticipated to be approximately 83 feet below ground surface based the measured depth to water of the onsite monitoring well MW-1 and on the area's geology and geomorphology.
    - A search of the New Mexico Office of the State Engineer (NMOSE) Water Rights Reporting System reported four points of diversion (POD) within Sections 1, 2, 3, 10, 11 and 12 of Township 29 North and Range 12 West and nine PODs within Sections 34, 35, and 36 of Township 30 North Range 2 West. Of these PODs, only two, SJ-04380 and SJ-00428, are within a 1-mile radius of the site. Point of diversion SJ-04380 is monitoring well MW-1 and is located immediately southwest of the landfarm with a depth to water of approximately 83 feet below ground surface (bgs). Point of diversion SJ-00428 is appears to be located approximately 3,560 feet to the northwest of the project site in an ephemeral wash at an elevation approximately 76 feet lower than the landfarm with a reported depth to water of 25 feet bgs.
    - A search of the New Mexico Energy, Minerals and Natural Resources Department (EMNRD) Oil Conservation Division (OCD) online imaging database yielded three cathodic well records from the same Sections. Reported depths to groundwater ranged from 90 feet to 170 feet below ground surface on these cathodic well reports.

The location is **not** within:

- 300 feet of any continuously flowing watercourse or any other significant water course – the nearest significant watercourse being a tributary to Hargis Arroyo approximately 500 feet to the north of the site.
- 200 feet of any lakebed, sinkhole or playa lake.
- 300 feet of an occupied permanent residence, school, hospital, institution, or church.
- 500 feet of a spring or a private, domestic fresh water well used by less than five households for domestic or stock watering purposes.
- 1,000 feet of any fresh water well or spring.
- incorporated municipal boundaries or within a defined municipal fresh water well field covered under a municipal ordinance adopted pursuant to Section 3-27-3 NMSA 1978 as amended.
- 300 feet of a wetland
- the area overlying a subsurface mine.
- an unstable area.
- 100-year floodplain.



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Rule Engineering, LLC
Solutions to Regulations for Industry

0 500 1,000 2,000 3,000
Feet
1:18,500

Agua Moss

NW1/4-S02-T29N-R12W
San Juan County, NM

Registered Water Well and Cathodic Well Map
Agua Moss

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 01839	SJM2	SJ		4	1	10	29N	12W	224211	4070825*	212	175	37
SJ 03277	SJAR	SJ	4	2	1	01	29N	12W	227636	4072515*	180	120	60
SJ 03410	SJM2	SJ	4	3	3	11	29N	12W	225484	4069859*	75		
SJ 04193 POD1	SJM2	SJ	2	3	2	10	29N	12W	224642	4070983	260	160	100

Average Depth to Water: **151 feet**

Minimum Depth: **120 feet**

Maximum Depth: **175 feet**

Record Count: 4

PLSS Search:

Section(s): 1, 2, 3, 10, 11, 12 **Township:** 29N **Range:** 12W

***UTM location was derived from PLSS - see Help**

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
SJ 00428	SJAR	SJ		4	4	34	30N	12W	225171	4073141*	107	25	82
SJ 02296	SJAR	SJ		3	4	36	30N	12W	227961	4072991*	300	89	211
SJ 02296 S	SJAR	SJ	1	3	4	36	30N	12W	227812	4073163	300	100	200
SJ 04200 POD1	SJAR	SJ	4	1	1	34	30N	12W	224057	4074320	120		
SJ 04241 POD1	SJ	SJ		4	4	36	30N	12W	228423	4072970	36		
SJ 04241 POD2	SJ	SJ		4	4	36	30N	12W	228412	4072865	43		
SJ 04241 POD3	SJ	SJ		4	4	36	30N	12W	228473	4072901	30		
SJ 04241 POD4	SJ	SJ		4	4	36	30N	12W	228474	4073021	32		
SJ 04241 POD5	SJ	SJ		4	4	36	30N	12W	228413	4073048	27		

Average Depth to Water: **71 feet**
Minimum Depth: **25 feet**
Maximum Depth: **100 feet**

Record Count: 9

PLSS Search:

Section(s): 34, 35, 36 **Township:** 30N **Range:** 12W

***UTM location was derived from PLSS - see Help**

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DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO

Operator Burlington Resources Location: Unit F Sec. 1 Twp 29 Rng 12

Name of Well/Wells or Pipeline Serviced Cornell #3R 30-045-29539

Elevation ____ Completion Date 4-22-98 Total Depth 300' Land Type SF

Casing Strings, Sizes, Types & Depths 8" PVC X 20'

If Casing Strings are cemented, show amounts & types used 4 Bags Cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used

none

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 170 Serp

Depths gas encountered: none

Ground bed depth with type & amount of coke breeze used: 300' = 1500 lbs Lorresco SW

Depths anodes placed: 290, 280, 270, 255, 245, 235, 225, 215

Depths vent pipes placed: 300'

Vent pipe perforations: Bottom 150'

Remarks:

RECEIVED
MAR - 9 1999
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

Received by OCD: 9/8/2020 4:24:06 PM

TIERRA DYNAMIC COMPANY	DEEP WELL GROUNDED LOG DATA SH	
COMPANY NAME:	Burlington Resources	SF-045557A
WELL NAME :	Colvell #3R	
LEGAL LOCATION:	1-29-12	COUNTY: San Juan

DATE: 4-22-98	TYPE OF COKE: Lorsco SW
DEPTH: 300'	AMT. OF COKE BACKFILL: 150 lbs
BIT SIZE: 6 3/4	VENT PIPE: 300'
DRILLER NAME: Jack Ledbetter	PERF. PIPE: Bottom 130'
SIZE AND TYPE OF CASING: 8" PVC X 20'	ANODE AMT. & TYPE: Anotec - Duriron
	BOULDER DRILLING:

DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE
100			265	3.0		430		
105			270	2.7	3	435		
110			275	4.0		440		
115			280	3.5	2	445		
120			285	3.0		450		
125			290	3.6	1	455		
130			295	3.2		460		
135			300	TD.		465		
140			305			470		
145			310			475		
150	1.7		315			480		
155	1.7		320			485		
160	1.5		325			490		
165	1.10		330			495		
170	1.8		335			500		
175	1.4		340			505		
180	1.7		345			510		
185	1.9		350			515		
190	1.9		355			520		
195	2.1		360			525		
200	2.7		365			530		
205	2.5		370			535		
210	2.2		375			540		
215	2.1	8	380			545		
220	2.4		385			550		
225	2.0	7	390			555		
230	2.1		395			560		
235	1.7	6	400			565		
240	1.9		405			570		
245	2.4	5	410			575		
250	2.6		415			580		
255	2.5	4	420			585		
260	1.8		425			590		
						595		

COMPLETION INFORMATION:

WATER DEPTHS: 170 Seep

ISOLATION PLUGS:

ANODE#	DEPTH	OUTPUT NO COK	OUTPUT COKED
1	290	3.5	10.6
2	280	3.2	10.7
3	270	2.4	10.1
4	255	2.6	6.2
5	245	2.5	10.2
6	235	1.8	5.3
7	225	2.2	5.6
8	215	2.0	5.5
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

LOGING VOLTS: 12.67 VOLTAGE SOURCE: Auto

TOTAL AMPS: 13.7 TOTAL G/B RESISTANCE: .80

REMARKS:

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS NORTHWESTERN NEW MEXICO

Operator Burlington Resources Location: Unit A Sec. 1 Twp 29 Rng 12

Name of Well/Wells or Pipeline Serviced Cornell #5R

30-045-29538

Elevation ____ Completion Date 4-23-98 Total Depth 320' Land Type SF

Casing Strings, Sizes, Types & Depths 8" PVC x 20'

If Casing Strings are cemented, show amounts & types used 4 Bags Cement

If Cement or Bentonite Plugs have been placed, show depths & amounts used

none

Depths & thickness of water zones with description of water: Fresh, Clear, Salty, Sulphur, Etc. 120 Seep

Depths gas encountered: none

Ground bed depth with type & amount of coke breeze used: 320', = 1500 lbs Loresco SW

Depths anodes placed: 310, 300, 290, 280, ~~270~~, 260, 250, 240

Depths vent pipes placed: 320'

Vent pipe perforations: Bottom 150'

Remarks:

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MAR - 9 1999
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included

Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

TIERRA DYNAMIC COMPANY — DEEP WELL GROUNDED LOG DATA SH — SF-078557A

COMPANY NAME: Burlington Resources

WELL NAME: Cornell #5R

LEGAL LOCATION: 1-29-12 — COUNTY: San Juan

DATE: 4-23-98

DEPTH: 300'

BIT SIZE: 6 3/4

DRILLER NAME: Jack Ledbetter

SIZE AND TYPE OF CASING: 8" PVC X 20'

TYPE OF COKE: Loresco SW

AMT. OF COKE BACKFILL: 1500 lbs

VENT PIPE: 300'

PERF. PIPE: Bottom 150'

ANODE AMT. & TYPE:

BOULDER DRILLING:

COMPLETION INFORMATION:

WATER DEPTHS: 120 seep

ISOLATION PLUGS:

DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE	DEPTH FT.	LOG	ANODE
100			265	4.1		430		
105			270	4.1	5	435		
110			275	4.0		440		
115			280	4.0	4	445		
120			285	3.9		450		
125			290	3.2	3	455		
130			295	3.4		460		
135			300	4.0	2	465		
140			305	4.0		470		
145			310	4.5	1	475		
150			315	4.4		480		
155			320	T.D.		485		
160			325			490		
165			330			495		
170			335			500		
175			340			505		
180			345			510		
185			350			515		
190			355			520		
195			360			525		
200	2.3		365			530		
205	3.3		370			535		
210	3.3		375			540		
215	3.3		380			545		
220	4.3		385			550		
225	3.3		390			555		
230	3.4		395			560		
235	2.9		400			565		
240	2.8	8	405			570		
245	2.6		410			575		
250	2.3	7	415			580		
255	3.7		420			585		
260	4.1	6	425			590		
						595		

ANODE#	DEPTH	OUTPUT NO COK	OUTPUT COKED
1	310	4.4	5.7
2	300	4.3	6.7
3	290	3.6	5.6
4	280	3.5	7.1
5	270	4.0	8.3
6	260	4.4	8.8
7	250	4.0	8.1
8	240	4.1	7.6
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			

LOGING VOLTS: 12.57 — VOLTAGE SOURCE: Auto

TOTAL AMPS: 20.5 — TOTAL G/B RESISTANCE: .61

REMARKS:

1440

#4 30-045-25923

DATA SHEET FOR DEEP GROUND BED CATHODIC PROTECTION WELLS
NORTHWESTERN NEW MEXICO
(Submit 3 copies to OCD Aztec Office)

Operator MERIDIAN OIL INC. Location: Unit B Sec. 34 Twp 30 Rng 12

Name of Well/Wells or Pipeline Serviced McGRATH #4

cps 5189w

Elevation 5749' Completion Date 4/28/85 Total Depth 258' Land Type* N/A

Casing, Sizes, Types & Depths 20'

If Casing is cemented, show amounts & types used N/A

If Cement or Bentonite Plugs have been placed, show depths & amounts used

N/A

Depths & thickness of water zones with description of water when possible:

Fresh, Clear, Salty, Sulphur, Etc. N/A

Depths gas encountered: N/A

Type & amount of coke breeze used: 1850 lbs.

Depths anodes placed: 200', 190', 180', 170', 125', 105'

Depths vent pipes placed: N/A

Vent pipe perforations: N/A

Remarks: gb #1

RECEIVED
MAY 31 1991
OIL CON. DIV.
DIST. 3

If any of the above data is unavailable, please indicate so. Copies of all logs, including Drillers Log, Water Analyses & Well Bore Schematics should be submitted when available. Unplugged abandoned wells are to be included.

*Land Type may be shown: F-Federal; I-Indian; S-State; P-Fee.
If Federal or Indian, add Lease Number.

CORROSION CONTROL CO.

P.O. DRAWER G - PHONE 334-6141
AZTEC, NEW MEXICO 87410

Drilling Log (Attach Hereto). ☐ Completion Date March 6, 1985

Name	Location	
McGrath #4	Mountain Royalty Co.	5189W
Type & Size Bit Used		Work Order No. P6-12

Anode Hole Depth	Total Drilling Rig Time	Total Lbs. Coke Used	Lost Circulation Mat'l Used	No. Sacks Mud Used
255 feet		1850		

	#1	#2	#3	#4	#5	#6	#7	#8	#9	#10
Anode Depth	200	190	180	170	160	105				
Anode Output (Amps)	4.10	4.41	4.48	3.94	3.76	3.21				
Anode Depth	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20
Anode Output (Amps)	#11	#12	#13	#14	#15	#16	#17	#18	#19	#20

Total Circuit Resistance			No. 8 C.P. Cable Used	No. 2 C.P. Cable Used
Volts 12.3	Amps 11.4	Ohms 0.95	1030 feet	

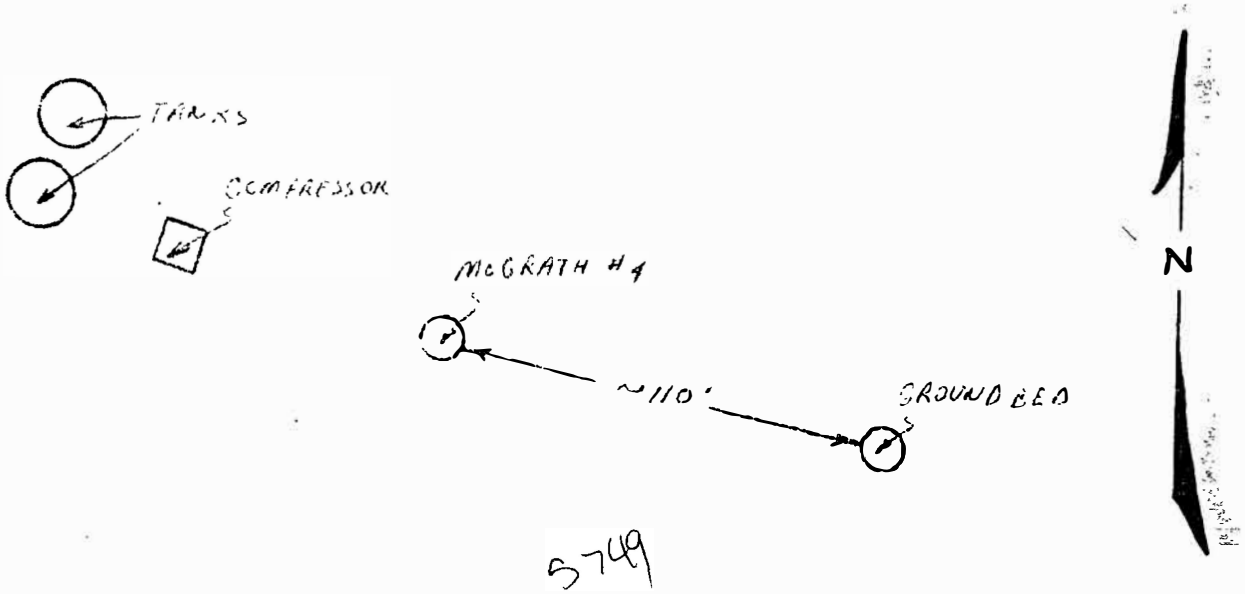
Remarks: Pipe/Soil Potentials (static) close -0.634V. remote -0.728V.

Casing is not insulated from the flow line.

All Construction Completed

(Signature)

GROUND BED LAYOUT SKETCH



5749

CORROSION CONTROL CO. — 301 Ash — Aztec New Mexico

COMPANY SLR DAILY DRILLING REPORT APRIL 26 19 85

WELL NAME:	WELL NUMBER:	SECTION:	TOWNSHIP:	RANGE:
Mc GRATH	4	34	30	12

WATER AT 90 feet FEET HOLE MADE: 240 feet

DESCRIPTION OF FORMATION

FROM	TO	FORMATION IS	COLOR
0	20	CASING	
20	40	CASING	
40	80	SANDSTONE	
80	100	SAND (WATER)	
100	160	BENTONITE	
160	240	SANDY SHALE	

REMARKS:

Driller Terence Largent Tool Dresser

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S18 W

CORROSION CONTROL

P. O. BOX 179 — PHONE 334-6361
AZTEC, NEW MEXICO 87410

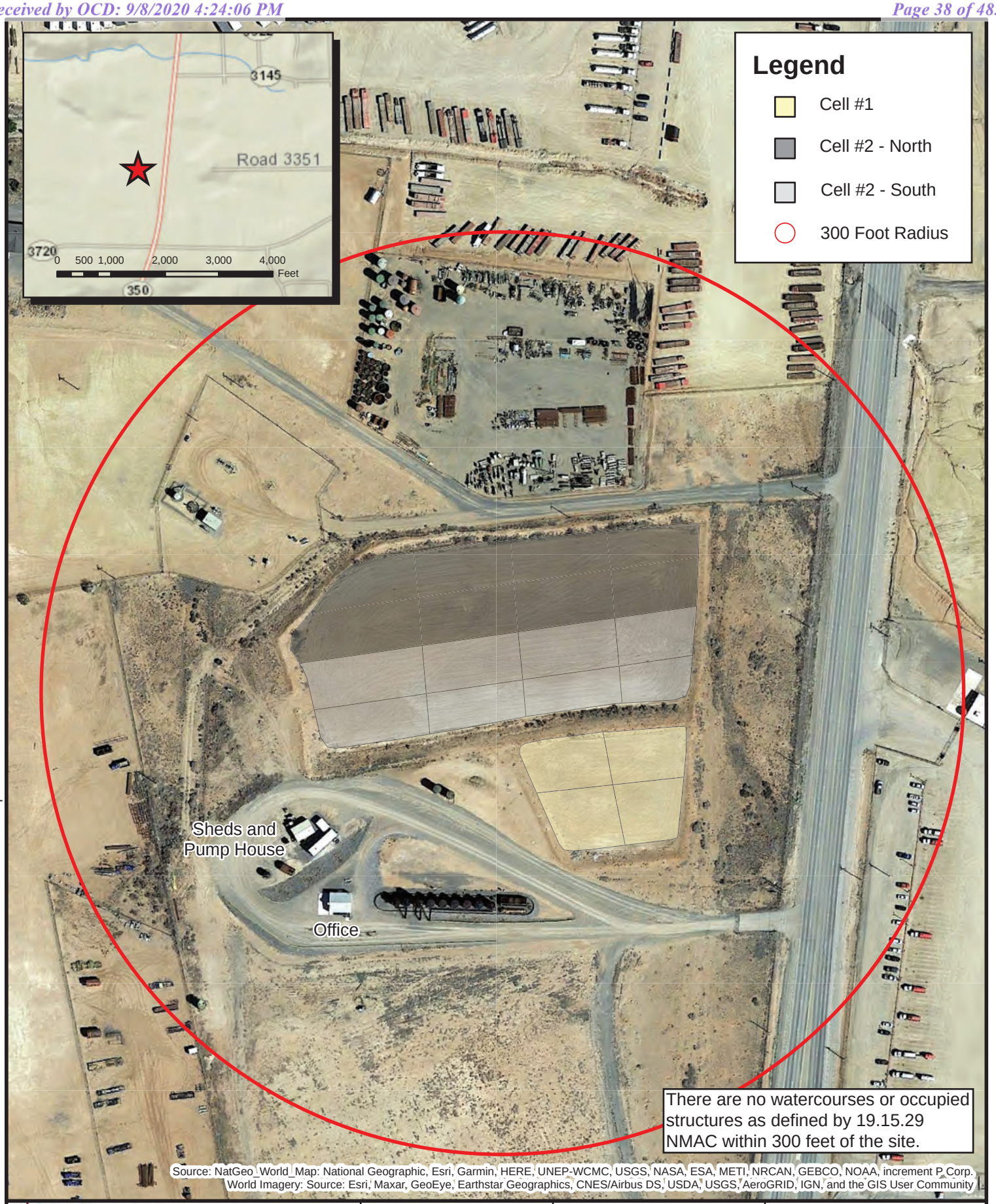
DEEP WELL GROUNDBED LOG

Date APRIL 26, 1985

Company SOUTHLAND ROYALTY COMPANY

Well No. 56-12 Location McGRATH #4 Volts Applied 12.3 Amperes 14.4

0				230	0.96		ANODE #	AMPS	680	AMPS - FINAL	
5				235	0.49		1	1.28	685	4.16	
10				240	0.48		2	1.15	690	4.41	
15					0.51		3	1.31	695	4.46	
25				250	0.64	475	4	1.33	700	3.99	
30				255	0.75		5	1.97	705	4.78	
35				260	T.D. 258'		6	1.18	710	3.21	
40				265					715		
45									720	0.85 OHMS	
50				275		500			725		
55				280					730		
60				285					735		
65				290					740		
70									745		
75				300		525			750		
80									755		
85	AMPS	ANODE #							760		
90									765		
95	1.03								770		
100	0.99			325		550			775		
105	0.99	X	6						780		
110	0.59								785		
115	0.46								790		
120	0.48								795		
125	1.13	X	5	350		575			800		
130	1.08								805		
135	0.71								810		
140	0.51								815		
145	0.47								820		
150	0.59			375		600			825		
155	0.65								830		
160	0.61								835		
165	0.61								840		
170	0.90	X	4						845		
175	0.85			400		625			850		
180	1.02	X	3						855		
185	1.12								860		
190	1.09	X	2						865		
195	1.08								870		
200	1.05	X	1	425		650			875		
205	0.86								880		
210	0.68								885		
215	0.54								890		
220	0.65								895		
225	0.56			450		675			900		



Document Path: M:\27 GIS CAD\Marrion\Marrion Land Farm\Marrion Landfarm.aprx

Rule Engineering, LLC
Solutions to Regulations for Industry

0 50 100 200 300 400
Feet
1:2,250

Agua Moss

NW1/4-S02-T29N-R12W
San Juan County, NM

Watercourse and Occupied Structure Map
Agua Moss

Rule Engineering, LLC
Solutions to Regulations for Industry

0 135 270 540 810 Feet
1:4,500

Agua Moss

NW1/4-S02-T29N-R12W
San Juan County, NM

Water Wells and Natural Springs Map
Agua Moss

7/28/2020

U.S. Fish and Wildlife Service
National Wetlands Inventory

Sunco Landfarm Wetlands Vicinity Map

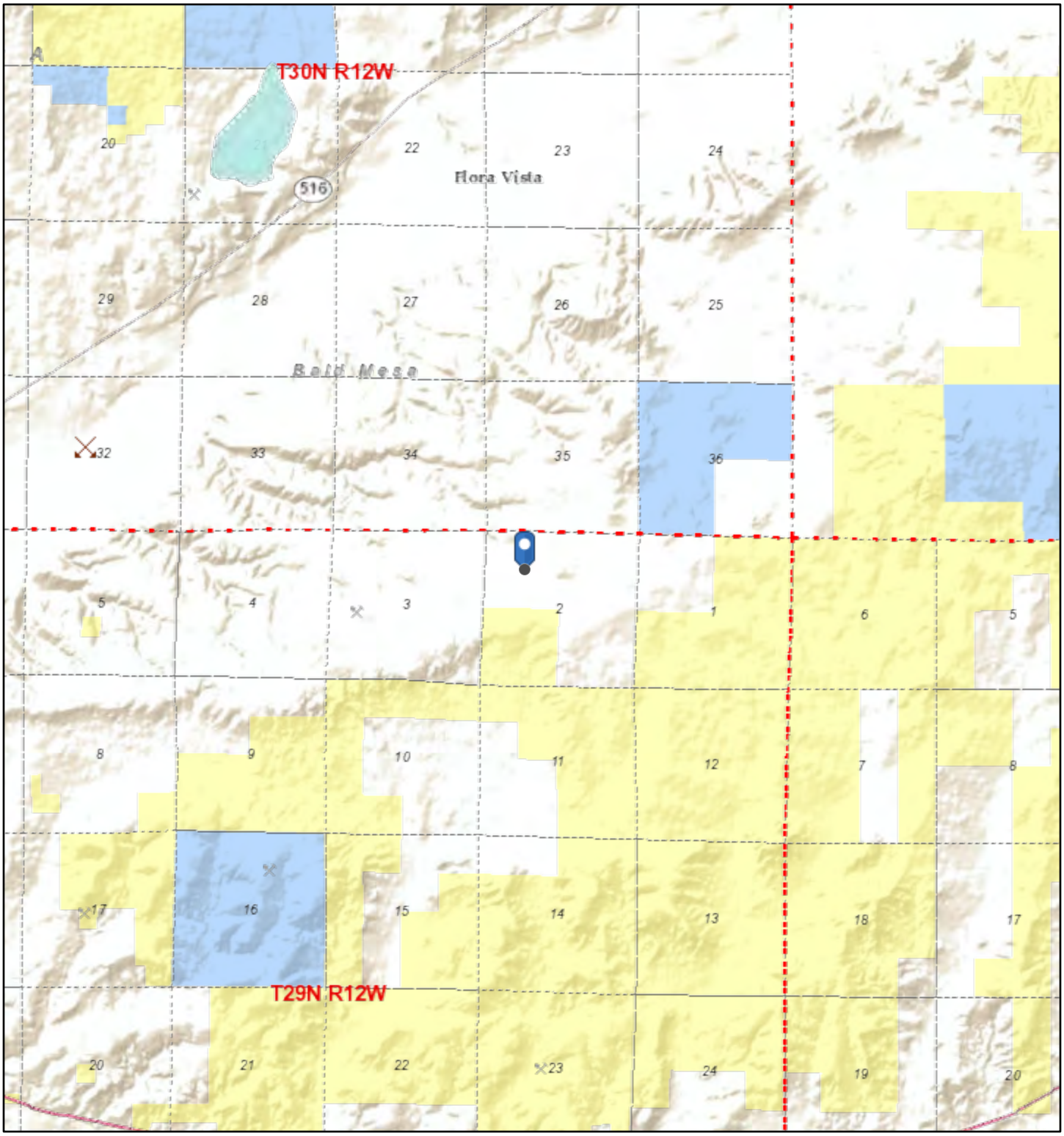
July 27, 2020

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland
- Freshwater Emergent Wetland
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Lake
- Other
- Riverine

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

Sunco Landfarm Mines Vicinity Map



7/27/2020, 2:43:12 PM

1:72,224

0 0.5 1 2 mi

0 0.75 1.5 3 km

Registered Mines

- Aggregate, Stone etc.
- Humate

U.S. Bureau of Land Management - New Mexico State Office, Sources: Esri, USGS, NOAA, Sources: Esri, Garmin, USGS, NPS

National Flood Hazard Layer FIRMette

FEMA

108°4'38" W 36°45'46" N

108°4'1" W 36°45'17" N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature

MAP PANELS
- Digital Data Available
- No Digital Data Available
- Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 7/27/2020 at 4:38 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Appendix B

Analytical Laboratory Reports

Rule

envirotech
Analytical Laboratory

Analytical Report

Report Summary

Client: Agua Moss LLC

Chain Of Custody Number:

Samples Received: 3/10/2015 11:03:00AM

Job Number: 07117-0028

Work Order: P503031

Project Name/Location: 1st Quarter Vadose Zone Sampling

Entire Report Reviewed By: _____ Date: 3/19/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865
Three Springs - 65 Mercado Street, Suite 115, Durango, CO 81301 Ph (970) 259-0615 Fr (800) 362-1879
envirotech-inc.com
laboratory@envirotech-inc.com

Received by OCD: 9/8/2020 4:24:06 PM

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Analytical Laboratory

Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	Reported:
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Cell #1-3.4	P503031-01A	Soil	03/10/15	03/10/15	Glass Jar, 4 oz.
Cell #2S-6	P503031-02A	Soil	03/10/15	03/10/15	Glass Jar, 4 oz.
Cell #2N-6	P503031-03A	Soil	03/10/15	03/10/15	Glass Jar, 4 oz.

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laboratory@envirotech-inc.com

Received by OCD: 9/8/2020 4:24:06 PM

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Analytical Laboratory

Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Cell #1-3.4

P503031-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*85.7 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg	1	1511016	03/12/15	03/18/15	EPA 8015D	
Surrogate: o-Terphenyl		*113 %*		*50-200*	*1511016*	*03/12/15*	*03/18/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*80.3 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	34.7	mg/kg	1	1512006	03/16/15	03/16/15	EPA 418.1	

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Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	Reported:
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Cell #2S-6

P503031-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*87.5 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.97	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	29.9	mg/kg	1	1511016	03/12/15	03/18/15	EPA 8015D	
Surrogate: o-Terphenyl		*113 %*		*50-200*	*1511016*	*03/12/15*	*03/18/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*81.6 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	52.0	35.0	mg/kg	1	1512006	03/16/15	03/16/15	EPA 418.1	

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Analytical Laboratory

Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	Reported:
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Cell #2N-6

P503031-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Toluene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Ethylbenzene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
p,m-Xylene	ND	0.20	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
o-Xylene	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total Xylenes	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Total BTEX	ND	0.10	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8021B	
Surrogate: 4-Bromochlorobenzene-PID		*75.8 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8021B*	
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1511015	03/12/15	03/16/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	30.0	mg/kg	1	1511016	03/12/15	03/18/15	EPA 8015D	
Surrogate: o-Terphenyl		*123 %*		*50-200*	*1511016*	*03/12/15*	*03/18/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*72.5 %*		*50-150*	*1511015*	*03/12/15*	*03/16/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	39.5	34.6	mg/kg	1	1512006	03/16/15	03/16/15	EPA 418.1	

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Analytical Laboratory

Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	Reported:
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511015 - Purge and Trap EPA 5030A										
Blank (1511015-BLK1)				Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	*0.366*		"	*0.398*		*91.8*	*50-150*			
LCS (1511015-BS1)				Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Benzene	22.5	0.10	mg/kg	19.7		114	75-125			
Toluene	22.0	0.10	"	19.7		111	70-125			
Ethylbenzene	21.7	0.10	"	19.7		110	75-125			
p,m-Xylene	42.6	0.20	"	39.5		108	80-125			
o-Xylene	20.6	0.10	"	19.7		104	75-125			
Surrogate: 4-Bromochlorobenzene-PID	*0.384*		"	*0.395*		*97.2*	*50-150*			
Matrix Spike (1511015-MS1)		Source: P503031-01		Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Benzene	23.6	0.10	mg/kg	19.6	ND	120	75-125			
Toluene	22.2	0.10	"	19.6	ND	113	70-125			
Ethylbenzene	21.6	0.10	"	19.6	ND	110	75-125			
p,m-Xylene	42.0	0.20	"	39.3	ND	107	80-125			
o-Xylene	20.3	0.10	"	19.6	ND	103	75-125			
Surrogate: 4-Bromochlorobenzene-PID	*0.373*		"	*0.393*		*94.9*	*50-150*			
Matrix Spike Dup (1511015-MSD1)		Source: P503031-01		Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Benzene	21.5	0.10	mg/kg	19.9	ND	108	75-125	9.01	15	
Toluene	21.2	0.10	"	19.9	ND	107	70-125	4.66	15	
Ethylbenzene	20.8	0.10	"	19.9	ND	105	75-125	3.54	15	
p,m-Xylene	40.8	0.20	"	39.8	ND	103	80-125	2.89	15	
o-Xylene	19.7	0.10	"	19.9	ND	99.1	75-125	2.96	15	
Surrogate: 4-Bromochlorobenzene-PID	*0.386*		"	*0.398*		*97.1*	*50-150*			

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Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511015 - Purge and Trap EPA 5030A										
Blank (1511015-BLK1)				Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Gasoline Range Organics (C6-C10)	ND	9.96	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	*0.344*		"	*0.398*		*86.5*	*50-150*			
LCS (1511015-BS1)				Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Gasoline Range Organics (C6-C10)	278	9.87	mg/kg	263		106	80-120			
Surrogate: 4-Bromochlorobenzene-FID	*0.359*		"	*0.395*		*91.0*	*50-150*			
Matrix Spike (1511015-MS1)	**Source: P503031-01**			Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Gasoline Range Organics (C6-C10)	301	9.82	mg/kg	262	ND	115	75-125			
Surrogate: 4-Bromochlorobenzene-FID	*0.372*		"	*0.393*		*94.6*	*50-150*			
Matrix Spike Dup (1511015-MSD1)	**Source: P503031-01**			Prepared: 12-Mar-15 Analyzed: 17-Mar-15						
Gasoline Range Organics (C6-C10)	282	9.94	mg/kg	265	ND	107	75-125	6.37	15	
Surrogate: 4-Bromochlorobenzene-FID	*0.380*		"	*0.398*		*95.5*	*50-150*			

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Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1511016 - DRO Extraction EPA 3550M										
Blank (1511016-BLK1)				Prepared: 12-Mar-15 Analyzed: 18-Mar-15						
Diesel Range Organics (C10-C28)	ND	24.7	mg/kg							
Surrogate: o-Terphenyl	*42.8*		"	*39.5*		*108*	*50-200*			
LCS (1511016-BS1)				Prepared: 12-Mar-15 Analyzed: 18-Mar-15						
Diesel Range Organics (C10-C28)	478	24.6	mg/kg	492		97.1	38-132			
Surrogate: o-Terphenyl	*43.4*		"	*39.4*		*110*	*50-200*			
Matrix Spike (1511016-MS1)		Source: P503033-01		Prepared: 12-Mar-15 Analyzed: 18-Mar-15						
Diesel Range Organics (C10-C28)	521	24.9	mg/kg	498	ND	105	38-132			
Surrogate: o-Terphenyl	*40.6*		"	*39.8*		*102*	*50-200*			
Matrix Spike Dup (1511016-MSD1)		Source: P503033-01		Prepared: 12-Mar-15 Analyzed: 18-Mar-15						
Diesel Range Organics (C10-C28)	496	24.7	mg/kg	494	ND	100	38-132	4.91	20	
Surrogate: o-Terphenyl	*42.0*		"	*39.5*		*106*	*50-200*			

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Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Total Petroleum Hydrocarbons by 418.1 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1512006 - 418 Freon Extraction										
Blank (1512006-BLK1)				Prepared & Analyzed: 16-Mar-15						
Total Petroleum Hydrocarbons	ND	34.8	mg/kg							
Duplicate (1512006-DUP1)	Source: P503031-01			Prepared & Analyzed: 16-Mar-15						
Total Petroleum Hydrocarbons	35.6	34.6	mg/kg		ND				30	
Matrix Spike (1512006-MS1)	Source: P503031-01			Prepared & Analyzed: 16-Mar-15						
Total Petroleum Hydrocarbons	1920	34.8	mg/kg	2020	ND	95.0	80-120			

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Agua Moss LLC	Project Name:	1st Quarter Vadose Zone Sampling	
PO Box 600	Project Number:	07117-0028	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	19-Mar-15 15:41

Notes and Definitions

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Client: Agua Moss

Project: 1st Quarter Vadose zone sampling

Sampler: E. Garcia

Phone:

Email(s): E. Garcia

Project Manager: Grey Crabtree

RUSH? ☐ 1d ☐ 3d

Page 1 of 1

Lab Use Only	
Lab WO#	P503031
Job Number	07117-0028

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0						Lab Number	Correct Cont/Prsrv (s) Y/N
Cell #1 - 3, 4	3/10/15	9:50	S	1-4oz/G/Cool	X	X	X							01	Y
Cell #25 - 6	3/10/15	10:07	S	1-4oz/G/Cool	X	X	X							02	
Cell #2N - 6	3/10/15	10:21	S	1-4oz/G/Cool	X	X	X							03	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	3/10/15	11:03		3/10/15	1103
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

**Received on Ice Y / N

T1 9.5 T2 10.7 T3 12.6

AVG Temp °C 10.9

Sample Matrix: S - Soil, Sd - Solid, Sg - Sludge, A - Aqueous, O - Other _____

Container Type: g - glass, p - poly/plastic, ag - amber glass

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6 °C on subsequent days.

☐ Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:

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Analytical Report

Report Summary

Client: Agua Moss LLC

Chain Of Custody Number:

Samples Received: 5/21/2015 7:15:00AM

Job Number: 07117-0030

Work Order: P505056

Project Name/Location: 2nd Qtr Landfarm Sampling

Entire Report Reviewed By: _____ Date: 6/5/15

Tim Cain, Laboratory Manager

The results in this report apply to the samples submitted to Envirotech's Analytical Laboratory and were analyzed in accordance with the chain of custody document supplied by you, the client, and as such are for your exclusive use only. The results in this report are based on the sample as received unless otherwise noted. Partial or incomplete reproduction of this report is prohibited, unless approved by Envirotech, Inc. If you have any questions regarding this analytical report, please don't hesitate to contact Envirotech's Laboratory Staff.

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Analyical Report for Samples

Client Sample ID	Lab Sample ID	Matrix	Sampled	Received	Container
Cell 1-1	P505056-01A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 1-3	P505056-02A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 1-4.2	P505056-03A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 1-4.3	P505056-04A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2S-5	P505056-05A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2S-4	P505056-06A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2S-3	P505056-07A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2S-6	P505056-08A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2N-4	P505056-09A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2N-5	P505056-10A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2N-6	P505056-11A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2N-7	P505056-12A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2N	P505056-13A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 2S	P505056-14A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.
Cell 1	P505056-15A	Soil	05/20/15	05/21/15	Glass Jar, 4 oz.

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 1-1

P505056-01 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	**0.29**	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	**0.21**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	**0.49**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	**0.49**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*102 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.91	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.0	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*99.8 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*96.9 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	35.8	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**788**	9.75	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 1-3

P505056-02 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.19	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*97.5 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.48	mg/kg	0.9	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.4	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*101 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*99.4 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	36.0	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**573**	9.60	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 1-4.2

P505056-03 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.12**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	**0.12**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*95.3 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.82	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	38.5	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*92.7 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*101 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	33.2	mg/kg	0.9	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**457**	9.48	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 1-4.3

P505056-04 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*98.0 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.84	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**91.3**	37.5	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*97.9 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*101 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	32.8	mg/kg	0.9	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**557**	9.22	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2S-5

P505056-05 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*94.3 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.95	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	38.5	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*101 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*101 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	35.6	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**282**	9.40	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2S-4

P505056-06 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.14**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	**0.14**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*91.9 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	**11.1**	9.85	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.4	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*119 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*102 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	32.4	mg/kg	0.9	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**542**	9.45	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2S-3

P505056-07 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.19	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.09	mg/kg	0.9	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*94.7 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.48	mg/kg	0.9	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.4	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*107 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*94.6 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	36.5	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**421**	8.91	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2S-6

P505056-08 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*94.0 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.96	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	38.0	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*96.4 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*91.7 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	33.6	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**276**	9.32	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2N-4

P505056-09 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.14**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	**0.14**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*95.2 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.94	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.2	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*105 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*95.7 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	33.4	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**289**	9.89	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2N-5

P505056-10 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*96.2 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.90	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**41.7**	37.7	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*97.5 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*97.7 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	33.2	mg/kg	0.9	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**219**	9.56	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2N-6

P505056-11 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.19	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*101 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.59	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	38.9	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*104 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*100 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	34.4	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**342**	9.63	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2N-7

P505056-12 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Volatile Organics by EPA 8021									
Benzene	**0.13**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Toluene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Ethylbenzene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
p,m-Xylene	ND	0.20	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
o-Xylene	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total Xylenes	ND	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Total BTEX	**0.13**	0.10	mg/kg	1	1523001	05/31/15	06/05/15	EPA 8021B	H2
Surrogate: 4-Bromochlorobenzene-PID		*99.0 %*		*50-150*	*1523001*	*05/31/15*	*06/05/15*	*EPA 8021B*	*H2*
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	ND	39.6	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*97.5 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*99.8 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	ND	33.8	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**384**	9.04	mg/kg	0.9	1523004	06/01/15	06/01/15	EPA 300.0	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 2N

P505056-13 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.73	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**345**	37.2	mg/kg	1	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*102 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*98.4 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	**6540**	337	mg/kg	10	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**682**	9.58	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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PO Box 600	Project Number:	07117-0030	**Reported:**
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Cell 2S

P505056-14 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	9.59	mg/kg	1	1523001	05/31/15	06/02/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**189**	38.3	mg/kg	2	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*99.9 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*102 %*		*50-150*	*1523001*	*05/31/15*	*06/02/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	**2680**	33.6	mg/kg	1	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**753**	9.82	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cell 1

P505056-15 (Solid)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Nonhalogenated Organics by 8015									
Gasoline Range Organics (C6-C10)	ND	0.20	mg/kg	0.02	1523001	05/31/15	06/03/15	EPA 8015D	
Diesel Range Organics (C10-C28)	**17800**	3830	mg/kg	200	1523002	05/31/15	06/01/15	EPA 8015D	
Surrogate: o-Terphenyl		*783 %*		*50-200*	*1523002*	*05/31/15*	*06/01/15*	*EPA 8015D*	
Surrogate: 4-Bromochlorobenzene-FID		*99.1 %*		*50-150*	*1523001*	*05/31/15*	*06/03/15*	*EPA 8015D*	
Total Petroleum Hydrocarbons by 418.1									
Total Petroleum Hydrocarbons	**19100**	355	mg/kg	10	1523003	06/01/15	06/01/15	EPA 418.1	
Cation/Anion Analysis									
Chloride	**9.77**	9.54	mg/kg	1	1523004	06/01/15	06/01/15	EPA 300.0	

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Analytical Laboratory

Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Volatile Organics by EPA 8021 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1523001 - Purge and Trap EPA 5030A										
Blank (1523001-BLK1)				Prepared: 31-May-15 Analyzed: 01-Jun-15						
Benzene	ND	0.10	mg/kg							
Toluene	ND	0.10	"							
Ethylbenzene	ND	0.10	"							
p,m-Xylene	ND	0.20	"							
o-Xylene	ND	0.10	"							
Total Xylenes	ND	0.10	"							
Total BTEX	ND	0.10	"							
Surrogate: 4-Bromochlorobenzene-PID	*0.511*		*"*	*0.399*		*128*	*50-150*			
LCS (1523001-BS1)				Prepared: 31-May-15 Analyzed: 02-Jun-15						
Benzene	20.8	0.10	mg/kg	20.0		104	75-125			
Toluene	18.8	0.10	"	20.0		94.1	70-125			
Ethylbenzene	19.6	0.10	"	20.0		98.2	75-125			
p,m-Xylene	43.4	0.20	"	39.9		109	80-125			
o-Xylene	20.7	0.10	"	20.0		104	75-125			
Surrogate: 4-Bromochlorobenzene-PID	*0.473*		*"*	*0.399*		*118*	*50-150*			
Matrix Spike (1523001-MS1)		**Source: P505056-01**		Prepared: 31-May-15 Analyzed: 01-Jun-15						
Benzene	21.1	0.10	mg/kg	19.9	ND	106	75-125			
Toluene	18.8	0.10	"	19.9	ND	94.0	70-125			
Ethylbenzene	19.5	0.10	"	19.9	ND	97.7	75-125			
p,m-Xylene	43.0	0.20	"	39.9	0.29	107	80-125			
o-Xylene	20.3	0.10	"	19.9	0.21	101	75-125			
Surrogate: 4-Bromochlorobenzene-PID	*0.450*		*"*	*0.399*		*113*	*50-150*			
Matrix Spike Dup (1523001-MSD1)		**Source: P505056-01**		Prepared: 31-May-15 Analyzed: 01-Jun-15						
Benzene	22.7	0.10	mg/kg	19.0	ND	119	75-125	7.35	15	
Toluene	20.2	0.10	"	19.0	ND	106	70-125	7.45	15	
Ethylbenzene	21.0	0.10	"	19.0	ND	111	75-125	7.75	15	
p,m-Xylene	45.0	0.19	"	38.0	0.29	117	80-125	4.48	15	
o-Xylene	21.8	0.10	"	19.0	0.21	114	75-125	7.00	15	
Surrogate: 4-Bromochlorobenzene-PID	*0.407*		*"*	*0.380*		*107*	*50-150*			

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1523001 - Purge and Trap EPA 5030A										
Blank (1523001-BLK1)				Prepared: 31-May-15 Analyzed: 01-Jun-15						
Gasoline Range Organics (C6-C10)	ND	9.98	mg/kg							
Surrogate: 4-Bromochlorobenzene-FID	*0.448*		*"*	*0.399*		*112*	*50-150*			
LCS (1523001-BS1)				Prepared: 31-May-15 Analyzed: 02-Jun-15						
Gasoline Range Organics (C6-C10)	278	9.98	mg/kg	266		104	80-120			
Surrogate: 4-Bromochlorobenzene-FID	*0.419*		*"*	*0.399*		*105*	*50-150*			
Matrix Spike (1523001-MS1)		**Source: P505056-01**		Prepared: 31-May-15 Analyzed: 01-Jun-15						
Gasoline Range Organics (C6-C10)	280	9.97	mg/kg	266	ND	105	75-125			
Surrogate: 4-Bromochlorobenzene-FID	*0.399*		*"*	*0.399*		*100*	*50-150*			
Matrix Spike Dup (1523001-MSD1)		**Source: P505056-01**		Prepared: 31-May-15 Analyzed: 01-Jun-15						
Gasoline Range Organics (C6-C10)	300	9.51	mg/kg	253	ND	119	75-125	7.00	15	
Surrogate: 4-Bromochlorobenzene-FID	*0.359*		*"*	*0.380*		*94.4*	*50-150*			

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Nonhalogenated Organics by 8015 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1523002 - DRO Extraction EPA 3550M										
Blank (1523002-BLK1)				Prepared: 31-May-15 Analyzed: 01-Jun-15						
Diesel Range Organics (C10-C28)	ND	24.8	mg/kg							
Surrogate: o-Terphenyl	*40.3*		*"*	*39.6*		*102*	*50-200*			
LCS (1523002-BS1)				Prepared: 31-May-15 Analyzed: 01-Jun-15						
Diesel Range Organics (C10-C28)	586	24.8	mg/kg	496		118	38-132			
Surrogate: o-Terphenyl	*39.5*		*"*	*39.6*		*99.6*	*50-200*			
Matrix Spike (1523002-MS1)	**Source: P505056-01**			Prepared: 31-May-15 Analyzed: 01-Jun-15						
Diesel Range Organics (C10-C28)	653	40.0	mg/kg	500	ND	131	38-132			
Surrogate: o-Terphenyl	*39.5*		*"*	*40.0*		*98.7*	*50-200*			
Matrix Spike Dup (1523002-MSD1)	**Source: P505056-01**			Prepared: 31-May-15 Analyzed: 01-Jun-15						
Diesel Range Organics (C10-C28)	537	39.3	mg/kg	492	ND	109	38-132	19.5	20	
Surrogate: o-Terphenyl	*39.1*		*"*	*39.3*		*99.4*	*50-200*			

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Total Petroleum Hydrocarbons by 418.1 - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1523003 - 418 Freon Extraction										
Blank (1523003-BLK1)				Prepared & Analyzed: 01-Jun-15						
Total Petroleum Hydrocarbons	ND	35.3	mg/kg							
Duplicate (1523003-DUP1)		**Source: P505056-01**		Prepared & Analyzed: 01-Jun-15						
Total Petroleum Hydrocarbons	ND	34.0	mg/kg		ND				30	
Matrix Spike (1523003-MS1)		**Source: P505056-01**		Prepared & Analyzed: 01-Jun-15						
Total Petroleum Hydrocarbons	2070	34.8	mg/kg	2020	ND	102	80-120			

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Cation/Anion Analysis - Quality Control

Envirotech Analytical Laboratory

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1523004 - Anion Extraction EPA 300.0										
Blank (1523004-BLK1)				Prepared & Analyzed: 01-Jun-15						
Chloride	ND	9.78	mg/kg							
LCS (1523004-BS1)				Prepared & Analyzed: 01-Jun-15						
Chloride	497	9.53	mg/kg	477		104	90-110			
Matrix Spike (1523004-MS1)	**Source: P505055-07**			Prepared & Analyzed: 01-Jun-15						
Chloride	469	9.03	mg/kg	452	48.5	93.0	80-120			
Matrix Spike Dup (1523004-MSD1)	**Source: P505055-07**			Prepared & Analyzed: 01-Jun-15						
Chloride	557	9.65	mg/kg	482	48.5	105	80-120	17.2	20	

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Agua Moss LLC	Project Name:	2nd Qtr Landfarm Sampling	
PO Box 600	Project Number:	07117-0030	**Reported:**
Farmington NM, 87499	Project Manager:	Isaac Garcia	05-Jun-15 15:21

Notes and Definitions

H2	Sample was analyzed after regulatory hold-time exceeded for target analyte.
DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis
RPD	Relative Percent Difference

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Client: Agua Moss

Project: 2 Quarter Landfarm Sampling

Sampler: R. Garcia

Phone:

Email(s): Isaac G.

Project Manager: Greg Crabtree

RUSH? ☐ 1d ☐ 3d

Lab Use Only

Lab WO# P505056

Job Number 07117-0030

Page 1 of 2

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0	Lab Number	Correct Cont/Prsrv (s) Y/N
Cell 1-1	5/20/15	10:39	S	1-4oz/G/Cool	X	X	X	X	1	Y
Cell 1-3		10:48							2	
Cell 1-4.2		11:03							3	
Cell 1-4.3		11:13							4	
Cell 25-5		11:27							5	
Cell 25-4		11:37							6	
Cell 25-3		11:48							7	
Cell 25-6		11:59							8	
Cell 2N-4		12:14							9	
Cell 2N-5		12:26							10	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
	5/20/15	17:13		5/21/15	7:15
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

**Received on Ice (Y) / N

T1 3.4 T2 4.8 T3 2.9

AVG Temp °C 3.7

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____

Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

☒ Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:

envirotech Analytical Laboratory

5796 US Highway 64, Farmington, NM 87401 Ph (505) 632-0615 Fx (505) 632-1865

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Received by OCD: 9/8/2020 4:24:06 PM

Client: Same as Page 1 Augna Moss

Project: 2 Qtr LF Sampling

Sampler: I. Garcia

Phone:

Email(s): Isaac G.

Project Manager: Greg Crabtree

RUSH? 1d 3d

Lab Use Only

Lab WO# P505056

Job Number 07117-0030

Page 2 of 2

Sample ID	Sample Date	Sample Time	Matrix	Containers QTY - Vol/TYPE/Preservative	GRO/DRO by 8015	BTEX by 8021	TPH by 418.1	Chloride by 300.0					Lab Number	Correct Cont/Prsrv (s) Y/N
Cell 2N-6	5/20/15	12:39	S	1-4oz/G/cool	X	X	X	X					11	Y
Cell 2N-7	5/20/15	12:54	S	1-4oz/G/cool	X	X	X	X					12	
Cell 2N	5/20/15	1:07	S	1-4oz/G/cool	X		X	X					13	
Cell 2S	5/20/15	1:22	S	1-4oz/G/cool	X		X	X					14	
Cell 1	5/20/15	1:41	S	1-4oz/G/cool	X		X	X					15	

Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time
[signature]	5/20/15	17:13	[signature]	5/21/15	7:15
Relinquished by: (Signature)	Date	Time	Received by: (Signature)	Date	Time

Lab Use Only

**Received on Ice (Y) N

T1 3.4 T2 4.8 T3 2.9

AVG Temp °C 3.7

Sample Matrix: **S** - Soil, **Sd** - Solid, **Sg** - Sludge, **A** - Aqueous, **O** - Other _____

Container Type: **g** - glass, **p** - poly/plastic, **ag** - amber glass, v - VOA

**Samples requiring thermal preservation must be received on ice the day they are sampled or received packed in ice at an avg temp above 0 but less than 6°C on subsequent days.

[X] Sample(s) dropped off after hours to a secure drop off area.

Chain of Custody

Notes/Billing info:

envirotech Analytical Laboratory

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Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

October 07, 2015

Mark Hillier

Terracon
4905 Hawkins, NE
Albuquerque, NM 87109
TEL: (505) 715-0375
FAX (505) 797-4288

RE: Agua Moss Landfarm OrderNo.: 1509E41

Dear Mark Hillier:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/29/2015 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1509E41**
Date Reported: **10/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon **Client Sample ID:** C1-36"
Project: Agua Moss Landfarm **Collection Date:** 9/28/2015 2:00:00 PM
Lab ID: 1509E41-001 **Matrix:** SOIL **Received Date:** 9/29/2015 1:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/6/2015	21654
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	10/5/2015 7:57:38 PM	21652
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	10/5/2015 7:57:38 PM	21652
Surr: DNOP	97.9	57.9-140		%REC	1	10/5/2015 7:57:38 PM	21652
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	10/5/2015 11:29:56 PM	21639
Surr: BFB	87.7	75.4-113		%REC	1	10/5/2015 11:29:56 PM	21639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.047		mg/Kg	1	10/5/2015 11:29:56 PM	21639
Toluene	ND	0.047		mg/Kg	1	10/5/2015 11:29:56 PM	21639
Ethylbenzene	ND	0.047		mg/Kg	1	10/5/2015 11:29:56 PM	21639
Xylenes, Total	ND	0.094		mg/Kg	1	10/5/2015 11:29:56 PM	21639
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	10/5/2015 11:29:56 PM	21639

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1509E41**
Date Reported: **10/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-36"
Project: Agua Moss Landfarm
Collection Date: 9/28/2015 2:15:00 PM
Lab ID: 1509E41-002 **Matrix:** SOIL **Received Date:** 9/29/2015 1:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	10/6/2015	21654
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	10/5/2015 9:46:54 PM	21652
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	10/5/2015 9:46:54 PM	21652
Surr: DNOP	97.6	57.9-140		%REC	1	10/5/2015 9:46:54 PM	21652
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	10/5/2015 11:53:07 PM	21639
Surr: BFB	87.0	75.4-113		%REC	1	10/5/2015 11:53:07 PM	21639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	10/5/2015 11:53:07 PM	21639
Toluene	ND	0.048		mg/Kg	1	10/5/2015 11:53:07 PM	21639
Ethylbenzene	ND	0.048		mg/Kg	1	10/5/2015 11:53:07 PM	21639
Xylenes, Total	ND	0.095		mg/Kg	1	10/5/2015 11:53:07 PM	21639
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	10/5/2015 11:53:07 PM	21639

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1509E41**
Date Reported: **10/7/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon **Client Sample ID:** C2S-36"
Project: Agua Moss Landfarm **Collection Date:** 9/28/2015 2:35:00 PM
Lab ID: 1509E41-003 **Matrix:** SOIL **Received Date:** 9/29/2015 1:48:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	10/6/2015	21654
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	10/5/2015 10:14:09 PM	21652
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	10/5/2015 10:14:09 PM	21652
Surr: DNOP	97.3	57.9-140		%REC	1	10/5/2015 10:14:09 PM	21652
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	10/6/2015 12:16:16 AM	21639
Surr: BFB	87.4	75.4-113		%REC	1	10/6/2015 12:16:16 AM	21639
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.050		mg/Kg	1	10/6/2015 12:16:16 AM	21639
Toluene	ND	0.050		mg/Kg	1	10/6/2015 12:16:16 AM	21639
Ethylbenzene	ND	0.050		mg/Kg	1	10/6/2015 12:16:16 AM	21639
Xylenes, Total	ND	0.10		mg/Kg	1	10/6/2015 12:16:16 AM	21639
Surr: 4-Bromofluorobenzene	103	80-120		%REC	1	10/6/2015 12:16:16 AM	21639

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509E41**

07-Oct-15

Client: Terracon

Project: Agua Moss Landfarm

Sample ID	**MB-21654**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**21654**	RunNo:	**29310**					
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**890978**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-21654**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**21654**	RunNo:	**29310**					
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**890979**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	106	83.6	116			

Sample ID	**LCSD-21654**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**21654**	RunNo:	**29310**					
Prep Date:	**10/5/2015**	Analysis Date:	**10/6/2015**	SeqNo:	**890980**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	110	20	100.0	0	107	83.6	116	1.31	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509E41**

07-Oct-15

Client: Terracon

Project: Agua Moss Landfarm

Sample ID	**MB-21648**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**21648**		RunNo:	**29273**				
Prep Date:	**10/4/2015**	Analysis Date:	**10/4/2015**		SeqNo:	**889464**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.2	57.9	140			

Sample ID	**MB-21649**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**21649**		RunNo:	**29273**				
Prep Date:	**10/4/2015**	Analysis Date:	**10/4/2015**		SeqNo:	**889465**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		97.2	57.9	140			

Sample ID	**LCS-21648**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**21648**		RunNo:	**29273**				
Prep Date:	**10/4/2015**	Analysis Date:	**10/4/2015**		SeqNo:	**889466**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		100	57.9	140			

Sample ID	**LCS-21649**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**21649**		RunNo:	**29273**				
Prep Date:	**10/4/2015**	Analysis Date:	**10/4/2015**		SeqNo:	**889467**	Units:	**%REC**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.0		5.000		99.4	57.9	140			

Sample ID	**MB-21652**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**21652**		RunNo:	**29273**				
Prep Date:	**10/5/2015**	Analysis Date:	**10/5/2015**		SeqNo:	**890900**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	7.9		10.00		78.7	57.9	140			

Sample ID	**LCS-21652**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**21652**		RunNo:	**29273**				
Prep Date:	**10/5/2015**	Analysis Date:	**10/5/2015**		SeqNo:	**890901**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.4	57.4	139			
Surr: DNOP	4.7		5.000		94.7	57.9	140			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509E41**
07-Oct-15

Client: Terracon
Project: Agua Moss Landfarm

Sample ID	**1509E41-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**C1-36"**	Batch ID:	**21652**		RunNo:	**29273**				
Prep Date:	**10/5/2015**	Analysis Date:	**10/5/2015**		SeqNo:	**890903**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.8	48.88	0	89.1	42.3	146			
Surr: DNOP	4.9		4.888		99.6	57.9	140			

Sample ID	**1509E41-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**C1-36"**	Batch ID:	**21652**		RunNo:	**29273**				
Prep Date:	**10/5/2015**	Analysis Date:	**10/5/2015**		SeqNo:	**890904**	Units:	**mg/Kg**		

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.9	49.26	0	85.0	42.3	146	3.86	28.9	
Surr: DNOP	4.9		4.926		100	57.9	140	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1509E41**
07-Oct-15

Client: Terracon
Project: Agua Moss Landfarm

Sample ID	**MB-21639**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**21639**	RunNo:	**29302**					
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890915**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		86.4	75.4	113			

Sample ID	**LCS-21639**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**21639**	RunNo:	**29302**					
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890916**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.7	79.6	122			
Surr: BFB	930		1000		92.9	75.4	113			

Sample ID	**1509E41-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**C2N-36"**	Batch ID:	**21639**	RunNo:	**29302**					
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890927**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.85	0	95.0	62.5	151			
Surr: BFB	910		954.2		95.2	75.4	113			

Sample ID	**1509E41-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**C2N-36"**	Batch ID:	**21639**	RunNo:	**29302**					
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890928**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.8	23.81	0	98.4	62.5	151	3.32	22.1	
Surr: BFB	900		952.4		94.9	75.4	113	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1509E41**

07-Oct-15

Client: Terracon

Project: Agua Moss Landfarm

Sample ID	**MB-21639**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**PBS**	Batch ID:	**21639**	RunNo:	**29302**
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890952** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**LCS-21639**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**21639**	RunNo:	**29302**
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890953** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.050	1.000	0	95.9	80	120			
Toluene	0.92	0.050	1.000	0	92.3	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.3	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.6	80	120			
Surr: 4-Bromofluorobenzene	1.1		1.000		112	80	120			

Sample ID	**1509E41-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**C1-36"**	Batch ID:	**21639**	RunNo:	**29302**
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890959** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.047	0.9461	0	81.8	69.6	136			
Toluene	0.78	0.047	0.9461	0	82.6	76.2	134			
Ethylbenzene	0.81	0.047	0.9461	0	85.1	75.8	137			
Xylenes, Total	2.4	0.095	2.838	0	86.0	78.9	133			
Surr: 4-Bromofluorobenzene	1.0		0.9461		109	80	120			

Sample ID	**1509E41-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**C1-36"**	Batch ID:	**21639**	RunNo:	**29302**
Prep Date:	**10/2/2015**	Analysis Date:	**10/5/2015**	SeqNo:	**890960** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.80	0.047	0.9452	0	84.4	69.6	136	3.06	20	
Toluene	0.81	0.047	0.9452	0	85.3	76.2	134	3.13	20	
Ethylbenzene	0.83	0.047	0.9452	0	88.1	75.8	137	3.31	20	
Xylenes, Total	2.5	0.095	2.836	0	88.9	78.9	133	3.19	20	
Surr: 4-Bromofluorobenzene	1.0		0.9452		110	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TER-Alb | Work Order Number: 1509E41 | RcptNo: 1

Received by/date: CS 09/29/15

Logged By: Celina Sessa 9/29/2015 1:48:00 PM Celina Sessa

Completed By: Celina Sessa 9/30/2015 10:19:23 AM Celina Sessa

Reviewed By: AC 10/02/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.0	Good	Not Present			

Chain-of-Custody Record

Client: Terracon

Mailing Address: 4905 Hawkins NE

Phone #: 505-222-5593

email or Fax#: mrhillis@terracon.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Agua Moss Landfarm

Project #: 66157040

Project Manager: Mark Hillis

Sampler: Chris Kozloski

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.0°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1509E41	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX - 8021				Air Bubbles (Y or N)
9/28/15	2:00	S	C1-36"			-001			X	X								X				
"	2:15	S	C2N-36"			-002			X	X								X				
"	2:35	S	C2S-36"			-003			X	X								X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/29/15	0800			9/29/15	0800
9/29/15	1348		Celina Sanchez	09/29/15	1348

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

December 30, 2015

Mark Hillier

Terracon
4905 Hawkins, NE
Albuquerque, NM 87109
TEL: (505) 715-0375
FAX (505) 797-4288

RE: Agua Moss OrderNo.: 1512322

Dear Mark Hillier:

Hall Environmental Analysis Laboratory received 7 sample(s) on 12/7/2015 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued December 23, 2015.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1512322-001 **Matrix:** SOIL

Client Sample ID: C1(36")
Collection Date: 12/7/2015 10:30:00 AM
Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	26	6.0		mg/Kg	20	12/11/2015 5:24:57 PM	22775
Chloride	230	30		mg/Kg	20	12/11/2015 5:24:57 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 5:12:33 PM	22775
Nitrogen, Nitrate (As N)	0.88	0.30		mg/Kg	1	12/11/2015 5:12:33 PM	22775
Sulfate	410	30		mg/Kg	20	12/11/2015 5:24:57 PM	22775
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	12/9/2015 3:26:17 PM	22709
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	4.1	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Barium	140	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Cadmium	ND	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Calcium	55000	2500		mg/Kg	100	12/9/2015 12:08:53 PM	22688
Chromium	7.3	0.30		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Copper	7.0	0.30		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Iron	12000	250		mg/Kg	100	12/9/2015 12:08:53 PM	22688
Lead	2.4	0.25		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Magnesium	5400	49		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Manganese	140	0.099		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Potassium	1800	99		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Selenium	ND	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Silver	ND	0.25		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Sodium	810	49		mg/Kg	2	12/9/2015 11:18:55 AM	22688
Uranium	ND	4.9		mg/Kg	1	12/9/2015 11:17:16 AM	22688
Zinc	25	2.5		mg/Kg	1	12/9/2015 11:17:16 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	12/10/2015 4:32:41 PM	22675
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	12/10/2015 4:32:41 PM	22675
Surr: DNOP	110	70-130		%REC	1	12/10/2015 4:32:41 PM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Surr: BFB	91.6	66.2-112		%REC	1	12/9/2015 2:14:33 PM	22678
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Toluene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1(36")
Project: Agua Moss
Collection Date: 12/7/2015 10:30:00 AM
Lab ID: 1512322-001 **Matrix:** SOIL **Received Date:** 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Ethylbenzene	ND	0.048		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Xylenes, Total	ND	0.095		mg/Kg	1	12/9/2015 2:14:33 PM	22678
Surr: 4-Bromofluorobenzene	119	80-120		%REC	1	12/9/2015 2:14:33 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2S(36")
Project: Agua Moss
Collection Date: 12/7/2015 10:50:00 AM
Lab ID: 1512322-002 **Matrix:** SOIL **Received Date:** 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	2.0	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Chloride	140	30		mg/Kg	20	12/11/2015 6:39:26 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Nitrogen, Nitrate (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:27:01 PM	22775
Sulfate	160	30		mg/Kg	20	12/11/2015 6:39:26 PM	22775
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.032		mg/Kg	1	12/9/2015 3:28:11 PM	22709
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	2.8	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Barium	110	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Cadmium	ND	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Calcium	11000	130		mg/Kg	5	12/9/2015 12:00:59 PM	22688
Chromium	2.2	0.30		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Copper	2.5	0.30		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Iron	6300	250		mg/Kg	100	12/9/2015 12:10:18 PM	22688
Lead	2.3	0.25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Magnesium	2800	25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Manganese	160	0.10		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Potassium	500	50		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Selenium	ND	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Silver	ND	0.25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Sodium	360	25		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Uranium	ND	5.0		mg/Kg	1	12/9/2015 11:25:31 AM	22688
Zinc	13	2.5		mg/Kg	1	12/9/2015 11:25:31 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/10/2015 4:54:25 PM	22675
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/10/2015 4:54:25 PM	22675
Surr: DNOP	103	70-130		%REC	1	12/10/2015 4:54:25 PM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Surr: BFB	90.8	66.2-112		%REC	1	12/9/2015 3:28:05 PM	22678
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Toluene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1512322-002 **Matrix:** SOIL

Client Sample ID: C2S(36")
Collection Date: 12/7/2015 10:50:00 AM
Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Ethylbenzene	ND	0.049		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Xylenes, Total	ND	0.098		mg/Kg	1	12/9/2015 3:28:05 PM	22678
Surr: 4-Bromofluorobenzene	119	80-120		%REC	1	12/9/2015 3:28:05 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N(36")
Project: Agua Moss
Collection Date: 12/7/2015 11:20:00 AM
Lab ID: 1512322-003 **Matrix:** SOIL **Received Date:** 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	1.1	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Chloride	270	30		mg/Kg	20	12/11/2015 7:04:15 PM	22775
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Nitrogen, Nitrate (As N)	8.8	0.30		mg/Kg	1	12/11/2015 6:51:51 PM	22775
Sulfate	660	30		mg/Kg	20	12/11/2015 7:04:15 PM	22775
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.032		mg/Kg	1	12/9/2015 3:30:00 PM	22709
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Barium	170	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Cadmium	ND	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Calcium	37000	240		mg/Kg	10	12/9/2015 12:02:23 PM	22688
Chromium	6.1	0.29		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Copper	5.9	0.29		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Iron	11000	240		mg/Kg	100	12/9/2015 12:11:57 PM	22688
Lead	3.7	0.24		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Magnesium	4500	49		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Manganese	180	0.098		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Potassium	1500	98		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Selenium	ND	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Silver	ND	0.24		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Sodium	470	49		mg/Kg	2	12/9/2015 11:30:06 AM	22688
Uranium	ND	4.9		mg/Kg	1	12/9/2015 11:28:27 AM	22688
Zinc	23	2.4		mg/Kg	1	12/9/2015 11:28:27 AM	22688
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	12/10/2015 5:16:11 PM	22675
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	12/10/2015 5:16:11 PM	22675
Surr: DNOP	102	70-130		%REC	1	12/10/2015 5:16:11 PM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Surr: BFB	94.5	66.2-112		%REC	1	12/9/2015 3:52:41 PM	22678
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Toluene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon **Client Sample ID:** C2N(36")
Project: Agua Moss **Collection Date:** 12/7/2015 11:20:00 AM
Lab ID: 1512322-003 **Matrix:** SOIL **Received Date:** 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Ethylbenzene	ND	0.048		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Xylenes, Total	ND	0.097		mg/Kg	1	12/9/2015 3:52:41 PM	22678
Surr: 4-Bromofluorobenzene	126	80-120	S	%REC	1	12/9/2015 3:52:41 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1512322-004 **Matrix:** SOIL

Client Sample ID: C2S(6")
Collection Date: 12/7/2015 12:20:00 PM
Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	6600	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	680	30		mg/Kg	20	12/11/2015 7:29:05 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	390	94		mg/Kg	10	12/10/2015 5:37:53 PM	22675
Motor Oil Range Organics (MRO)	2800	470		mg/Kg	10	12/10/2015 5:37:53 PM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/10/2015 5:37:53 PM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 4:17:14 PM	22678
Surr: BFB	91.8	66.2-112		%REC	1	12/9/2015 4:17:14 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
R	RPD outside accepted recovery limits
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Detection Limit

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N(6")
Project: Agua Moss
Collection Date: 12/7/2015 12:10:00 PM
Lab ID: 1512322-005 **Matrix:** SOIL **Received Date:** 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	8400	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	390	30		mg/Kg	20	12/11/2015 7:53:53 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	370	97		mg/Kg	10	12/10/2015 5:59:42 PM	22675
Motor Oil Range Organics (MRO)	3300	480		mg/Kg	10	12/10/2015 5:59:42 PM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/10/2015 5:59:42 PM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/9/2015 4:41:46 PM	22678
Surr: BFB	91.2	66.2-112		%REC	1	12/9/2015 4:41:46 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1512322-006 **Matrix:** SOIL

Client Sample ID: C1(6")
Collection Date: 12/7/2015 11:40:00 AM
Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	5000	200		mg/Kg	10	12/10/2015	22703
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	19	1.5		mg/Kg	1	12/11/2015 8:31:06 PM	22775
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	230	100		mg/Kg	10	12/11/2015 9:24:57 AM	22675
Motor Oil Range Organics (MRO)	1500	500		mg/Kg	10	12/11/2015 9:24:57 AM	22675
Surr: DNOP	0	70-130	S	%REC	10	12/11/2015 9:24:57 AM	22675
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/9/2015 5:06:17 PM	22678
Surr: BFB	87.5	66.2-112		%REC	1	12/9/2015 5:06:17 PM	22678

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1512322**
Date Reported: **12/30/2015**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1512322-007 **Matrix:** AQUEOUS

Client Sample ID: NM1-9 IW1504
Collection Date: 12/7/2015 12:40:00 PM
Received Date: 12/7/2015 4:33:00 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst: **ELS**	
Hardness (As CaCO3)	770	6.6		mg/L	1	12/15/2015 10:30:00 AM	R30843
SODIUM ADSORPTION RATIO						Analyst: **ELS**	
Sodium Absorption Ratio	50	0			1	12/16/2015 1:12:00 PM	R30889
SPECIFIC GRAVITY						Analyst: **JRR**	
Specific Gravity	1.010	0			1	12/8/2015 11:54:00 AM	R30692
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Fluoride	2.1	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Chloride	5000	250	*	mg/L	500	12/12/2015 2:48:35 AM	A30806
Nitrogen, Nitrite (As N)	ND	2.0		mg/L	20	12/8/2015 3:06:47 PM	R30715
Bromide	8.2	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Nitrogen, Nitrate (As N)	3.7	0.50		mg/L	5	12/8/2015 2:54:23 PM	R30715
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	12/8/2015 2:54:23 PM	R30715
Sulfate	620	10	*	mg/L	20	12/8/2015 3:06:47 PM	R30715
SM2510B: SPECIFIC CONDUCTANCE						Analyst: **MRA**	
Conductivity	19000	0.050		µmhos/cm	5	12/12/2015 12:01:56 AM	R30810
SM2320B: ALKALINITY						Analyst: **JRR**	
Alkalinity, Hydroxide (As CaCO3)	ND	2.000		mg/L CaCO3	1	12/10/2015 1:35:23 PM	R30782
Bicarbonate (As CaCO3)	388.8	20.00		mg/L CaCO3	1	12/10/2015 1:35:23 PM	R30782
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	12/10/2015 1:35:23 PM	R30782
Total Alkalinity (as CaCO3)	388.8	20.00		mg/L CaCO3	1	12/10/2015 1:35:23 PM	R30782
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst: **KS**	
Total Dissolved Solids	9860	200	*D	mg/L	1	12/16/2015 11:04:00 AM	22799
EPA METHOD 200.7: METALS						Analyst: **ELS**	
Calcium	230	5.0		mg/L	5	12/15/2015 1:27:17 PM	22725
Iron	6.1	1.0	*	mg/L	50	12/16/2015 2:11:44 PM	22713
Magnesium	46	1.0		mg/L	1	12/15/2015 1:25:32 PM	22725
Potassium	61	1.0		mg/L	1	12/15/2015 1:25:32 PM	22725
Sodium	3200	50		mg/L	50	12/16/2015 2:11:44 PM	22713

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22725**	SampType:	**MBLK**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**PBW**	Batch ID:	**22725**	RunNo:	**30843**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/15/2015**	SeqNo:	**942392**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								

Sample ID	**LCS-22725**	SampType:	**LCS**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**LCSW**	Batch ID:	**22725**	RunNo:	**30843**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/15/2015**	SeqNo:	**942393**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	49	1.0	50.00	0	97.8	85	115			
Magnesium	49	1.0	50.00	0	98.6	85	115			
Potassium	49	1.0	50.00	0	98.4	85	115			

Sample ID	**LLLCS-22725**	SampType:	**LCSLL**	TestCode:	**EPA Method 200.7: Metals**					
Client ID:	**BatchQC**	Batch ID:	**22725**	RunNo:	**30843**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/15/2015**	SeqNo:	**942394**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0	0.5000	0	101	50	150			
Magnesium	ND	1.0	0.5000	0	101	50	150			
Potassium	ND	1.0	0.5000	0	108	50	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22775**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**22775**	RunNo:	**30809**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/11/2015**	SeqNo:	**941358**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID	**LCS-22775**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**22775**	RunNo:	**30809**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/11/2015**	SeqNo:	**941359**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	103	90	110			
Chloride	14	1.5	15.00	0	93.8	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	94.6	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	96.8	90	110			
Sulfate	29	1.5	30.00	0	95.5	90	110			

Sample ID	**1512322-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**C1(36")**	Batch ID:	**22775**	RunNo:	**30809**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/11/2015**	SeqNo:	**941393**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.4	0.30	3.000	0	81.5	84.9	108			S
Nitrogen, Nitrate (As N)	8.3	0.30	7.500	0.8800	98.9	87.6	109			

Sample ID	**1512322-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**C1(36")**	Batch ID:	**22775**	RunNo:	**30809**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/11/2015**	SeqNo:	**941394**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.5	0.30	3.000	0	81.9	84.9	108	0.456	20	S
Nitrogen, Nitrate (As N)	8.3	0.30	7.500	0.8800	98.5	87.6	109	0.361	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R30715**	RunNo: **30715**
Prep Date:	Analysis Date: **12/8/2015**	SeqNo: **938175** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R30715**	RunNo: **30715**
Prep Date:	Analysis Date: **12/8/2015**	SeqNo: **938176** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.53	0.10	0.5000	0	105	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	95.6	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	99.6	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	95.1	90	110			
Sulfate	9.8	0.50	10.00	0	97.9	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A30806**	RunNo: **30806**
Prep Date:	Analysis Date: **12/12/2015**	SeqNo: **941286** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A30806**	RunNo: **30806**
Prep Date:	Analysis Date: **12/12/2015**	SeqNo: **941287** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	5.0	0.50	5.000	0	99.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22703**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**22703**	RunNo:	**30759**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/10/2015**	SeqNo:	**939490**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-22703**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**22703**	RunNo:	**30759**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/10/2015**	SeqNo:	**939491**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.6	116			

Sample ID	**LCSD-22703**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**22703**	RunNo:	**30759**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/10/2015**	SeqNo:	**939492**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	104	83.6	116	2.64	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22675**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**22675**	RunNo:	**30744**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/10/2015**	SeqNo:	**939460**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	70	130			

Sample ID	**LCS-22675**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**22675**	RunNo:	**30744**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/10/2015**	SeqNo:	**939461**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	109	57.4	139			
Surr: DNOP	5.6		5.000		112	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22678**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**22678**	RunNo:	**30727**					
Prep Date:	**12/8/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938888**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	870		1000		87.4	66.2	112			

Sample ID	**LCS-22678**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**22678**	RunNo:	**30727**					
Prep Date:	**12/8/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938889**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	25.00	0	83.6	79.6	122			
Surr: BFB	1100		1000		107	66.2	112			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID **MB-22678**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **22678**	RunNo: **30727**
Prep Date: **12/8/2015**	Analysis Date: **12/9/2015**	SeqNo: **938921** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

Sample ID **LCS-22678**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **22678**	RunNo: **30727**
Prep Date: **12/8/2015**	Analysis Date: **12/9/2015**	SeqNo: **938922** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.050	1.000	0	87.8	80	120			
Toluene	0.88	0.050	1.000	0	88.5	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.1	80	120			
Xylenes, Total	2.7	0.10	3.000	0	91.2	80	120			
Surr: 4-Bromofluorobenzene	1.3		1.000		134	80	120			S

Sample ID **1512322-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **C1(36")**	Batch ID: **22678**	RunNo: **30727**
Prep Date: **12/8/2015**	Analysis Date: **12/9/2015**	SeqNo: **938924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.047	0.9470	0	105	69.6	136			
Toluene	1.0	0.047	0.9470	0	108	76.2	134			
Ethylbenzene	1.1	0.047	0.9470	0	117	75.8	137			
Xylenes, Total	3.2	0.095	2.841	0	112	78.9	133			
Surr: 4-Bromofluorobenzene	1.3		0.9470		138	80	120			S

Sample ID **1512322-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **C1(36")**	Batch ID: **22678**	RunNo: **30727**
Prep Date: **12/8/2015**	Analysis Date: **12/9/2015**	SeqNo: **938925** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.047	0.9479	0	113	69.6	136	7.10	20	
Toluene	1.1	0.047	0.9479	0	112	76.2	134	4.61	20	
Ethylbenzene	1.2	0.047	0.9479	0	122	75.8	137	4.15	20	
Xylenes, Total	3.3	0.095	2.844	0	118	78.9	133	5.39	20	
Surr: 4-Bromofluorobenzene	1.3		0.9479		139	80	120	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22709**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**22709**	RunNo:	**30733**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938623**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-22709**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**22709**	RunNo:	**30733**					
Prep Date:	**12/9/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938624**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	105	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22688**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**22688**	RunNo:	**30722**
Prep Date:	**12/8/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938366** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID	**LCS-22688**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**22688**	RunNo:	**30722**
Prep Date:	**12/8/2015**	Analysis Date:	**12/9/2015**	SeqNo:	**938367** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	28	2.5	25.00	0	110	80	120			
Barium	25	0.10	25.00	0	102	80	120			
Cadmium	25	0.10	25.00	0	102	80	120			
Calcium	2600	25	2500	0	103	80	120			
Chromium	25	0.30	25.00	0	100	80	120			
Copper	26	0.30	25.00	0	104	80	120			
Iron	26	2.5	25.00	0	103	80	120			
Lead	25	0.25	25.00	0	99.2	80	120			
Magnesium	2500	25	2500	0	102	80	120			
Manganese	25	0.10	25.00	0	101	80	120			
Potassium	2500	50	2500	0	99.3	80	120			
Selenium	27	2.5	25.00	0	108	80	120			
Silver	5.1	0.25	5.000	0	102	80	120			
Sodium	2500	25	2500	0	100	80	120			
Uranium	26	5.0	25.00	0	104	80	120			
Zinc	26	2.5	25.00	0	103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**mb-1**	SampType:	**MBLK**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R30782**	RunNo:	**30782**					
Prep Date:		Analysis Date:	**12/10/2015**	SeqNo:	**940209**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	**lcs-1**	SampType:	**LCS**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R30782**	RunNo:	**30782**					
Prep Date:		Analysis Date:	**12/10/2015**	SeqNo:	**940210**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.28	20.00	80.00	0	96.6	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1512322**

30-Dec-15

Client: Terracon

Project: Agua Moss

Sample ID	**MB-22799**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**22799**	RunNo:	**30873**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/16/2015**	SeqNo:	**943604**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-22799**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**22799**	RunNo:	**30873**					
Prep Date:	**12/14/2015**	Analysis Date:	**12/16/2015**	SeqNo:	**943605**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	996	20.0	1000	0	99.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TER-Alb Work Order Number: 1512322 RcptNo: 1

Received by/date: CS 12/07/15

Logged By: Celina Sessa 12/7/2015 4:33:00 PM Celina Sessa

Completed By: Celina Sessa 12/7/2015 4:50:18 PM Celina Sessa

Reviewed By: 12/08/15

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ■	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ■	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? No
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.6	Good	Not Present			

Chain-of-Custody Record

Client: Terracon

Mailing Address: 4905 Hawkins NE Alb., NM 87109

Phone #: 505-222-5995

email or Fax#: mark.hill@terracon.com

QA/QC Package: ☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☒ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: Aqua Mesa

Project #: 96157040

Project Manager: Mark Hill

Sampler: MH

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1512322	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIM)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX 8021B	Chlorides 300.1	Maj. cat/Anions	WQCC Metals	Air Bubbles (Y or N)
12/7/15	1030	S	C1(3c")	(2) 4oz		-001			X	X								X	X	X	X	
"	1050	S	C2S(3c")	"		-002			X	X								X	X	X	X	
"	1120	S	C2N(3c")	"		-003			X	X								X	X	X	X	
"	1220	S	C2S(6")	(1) 4oz		-004			X	X									X			
"	1210	S	C2N(6")	"		-005			X	X									X			
"	1140	"	C1(6")	"		-006			X	X									X			
"	1240	W	NM1-9IW15Q4	3 plastic		-007						X	X	X	X							

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/7/15	1633		Robin Sosa	12/7/15	1633
Date:	Time:	Relinquished by:	Received by:	Date	Time

Remarks: Maj. cat/Anions = chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium & sodium

water analysis per 1510070-001

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Need results by 12/21/15

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 10, 2016

Mark Hillier

Terracon
4905 Hawkins, NE
Albuquerque, NM 87109
TEL: (505) 715-0375
FAX (505) 797-4288

RE: NM1-9 Landfarm OrderNo.: 1601B39

Dear Mark Hillier:

Hall Environmental Analysis Laboratory received 4 sample(s) on 1/29/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1601B39**
Date Reported: **2/10/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: Q116C2S
Project: NM1-9 Landfarm
Collection Date: 1/28/2016 12:50:00 PM
Lab ID: 1601B39-001 **Matrix:** SOIL **Received Date:** 1/29/2016 11:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	2/2/2016	23505
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	2/2/2016 11:03:34 PM	23504
Toluene	ND	0.048		mg/Kg	1	2/2/2016 11:03:34 PM	23504
Ethylbenzene	ND	0.048		mg/Kg	1	2/2/2016 11:03:34 PM	23504
Xylenes, Total	ND	0.096		mg/Kg	1	2/2/2016 11:03:34 PM	23504
Surr: 4-Bromofluorobenzene	111	80-120		%Rec	1	2/2/2016 11:03:34 PM	23504

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1601B39**
Date Reported: **2/10/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon **Client Sample ID:** Q116C1
Project: NM1-9 Landfarm **Collection Date:** 1/28/2016 1:15:00 PM
Lab ID: 1601B39-002 **Matrix:** SOIL **Received Date:** 1/29/2016 11:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	2/2/2016	23505
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.049		mg/Kg	1	2/2/2016 11:26:47 PM	23504
Toluene	ND	0.049		mg/Kg	1	2/2/2016 11:26:47 PM	23504
Ethylbenzene	ND	0.049		mg/Kg	1	2/2/2016 11:26:47 PM	23504
Xylenes, Total	ND	0.098		mg/Kg	1	2/2/2016 11:26:47 PM	23504
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	2/2/2016 11:26:47 PM	23504

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1601B39**
Date Reported: **2/10/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: Q116C2N
Project: NM1-9 Landfarm
Collection Date: 1/28/2016 1:45:00 PM
Lab ID: 1601B39-003 **Matrix:** SOIL **Received Date:** 1/29/2016 11:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **TOM**	
Petroleum Hydrocarbons, TR	1700	190		mg/Kg	10	2/2/2016	23505
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.048		mg/Kg	1	2/2/2016 11:49:58 PM	23504
Toluene	ND	0.048		mg/Kg	1	2/2/2016 11:49:58 PM	23504
Ethylbenzene	ND	0.048		mg/Kg	1	2/2/2016 11:49:58 PM	23504
Xylenes, Total	ND	0.095		mg/Kg	1	2/2/2016 11:49:58 PM	23504
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	2/2/2016 11:49:58 PM	23504

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1601B39**
Date Reported: **2/10/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon **Client Sample ID:** Q116IW
Project: NM1-9 Landfarm **Collection Date:** 1/28/2016 2:40:00 PM
Lab ID: 1601B39-004 **Matrix:** AQUEOUS **Received Date:** 1/29/2016 11:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst:	**MED**
Hardness (As CaCO3)	1200	6.6		mg/L	1	2/1/2016	R31819
SODIUM ADSORPTION RATIO						Analyst:	**MED**
Sodium Absorption Ratio	13	0			1	2/1/2016	R31819
SPECIFIC GRAVITY						Analyst:	**JRR**
Specific Gravity	1.003	0			1	2/4/2016 11:22:00 AM	R31910
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Fluoride	ND	0.50		mg/L	5	1/30/2016 12:02:53 AM	R31808
Chloride	2000	100		mg/L	200	2/3/2016 5:34:33 AM	A31880
Nitrogen, Nitrite (As N)	ND	0.50		mg/L	5	1/30/2016 12:02:53 AM	R31808
Bromide	9.5	0.50		mg/L	5	1/30/2016 12:02:53 AM	R31808
Nitrogen, Nitrate (As N)	ND	0.50		mg/L	5	1/30/2016 12:02:53 AM	R31808
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	1/30/2016 12:02:53 AM	R31808
Sulfate	980	10		mg/L	20	1/30/2016 12:15:18 AM	R31808
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**MRA**
Conductivity	8300	0.020		µmhos/cm	2	2/2/2016 7:54:39 PM	R31881
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	401.3	20.00		mg/L CaCO3	1	1/30/2016 7:10:52 AM	R31826
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	1/30/2016 7:10:52 AM	R31826
Total Alkalinity (as CaCO3)	401.3	20.00		mg/L CaCO3	1	1/30/2016 7:10:52 AM	R31826
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	5730	100	*D	mg/L	1	2/2/2016 4:33:00 PM	23514
EPA 6010B: TOTAL RECOVERABLE METALS						Analyst:	**MED**
Calcium	410	10		mg/L	10	2/1/2016 12:42:45 PM	23489
Magnesium	31	1.0		mg/L	1	2/1/2016 10:55:20 AM	23489
Potassium	280	10		mg/L	10	2/1/2016 12:42:45 PM	23489
Sodium	1000	50		mg/L	50	2/1/2016 12:44:10 PM	23489

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**
10-Feb-16

Client: Terracon
Project: NM1-9 Landfarm

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R31808**	RunNo: **31808**
Prep Date:	Analysis Date: **1/29/2016**	SeqNo: **973448** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Nitrogen, Nitrite (As N)	ND	0.10								
Bromide	ND	0.10								
Nitrogen, Nitrate (As N)	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R31808**	RunNo: **31808**
Prep Date:	Analysis Date: **1/29/2016**	SeqNo: **973449** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	107	90	110			
Nitrogen, Nitrite (As N)	0.96	0.10	1.000	0	96.3	90	110			
Bromide	2.6	0.10	2.500	0	103	90	110			
Nitrogen, Nitrate (As N)	2.5	0.10	2.500	0	102	90	110			
Phosphorus, Orthophosphate (As P	4.8	0.50	5.000	0	96.2	90	110			
Sulfate	9.8	0.50	10.00	0	98.0	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A31880**	RunNo: **31880**
Prep Date:	Analysis Date: **2/3/2016**	SeqNo: **975578** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A31880**	RunNo: **31880**
Prep Date:	Analysis Date: **2/3/2016**	SeqNo: **975579** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.8	0.50	5.000	0	95.2	90	110			

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**

10-Feb-16

Client: Terracon

Project: NM1-9 Landfarm

Sample ID	**MB-23505**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**23505**	RunNo:	**31860**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**974843**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-23505**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**23505**	RunNo:	**31860**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**974844**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.4	127			

Sample ID	**LCSD-23505**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**23505**	RunNo:	**31860**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**974845**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	102	83.4	127	1.29	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**

10-Feb-16

Client: Terracon

Project: NM1-9 Landfarm

Sample ID	**MB-23504**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**23504**	RunNo:	**31851**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**975028**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.050								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		113	80	120			

Sample ID	**LCS-23504**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**23504**	RunNo:	**31851**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**975029**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.050	1.000	0	103	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		117	80	120			

Sample ID	**1601B39-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Q116C2S**	Batch ID:	**23504**	RunNo:	**31851**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**975032**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.047	0.9425	0	123	71.5	122			S
Toluene	1.2	0.047	0.9425	0	129	71.2	123			S
Ethylbenzene	1.2	0.047	0.9425	0	129	75.2	130			
Xylenes, Total	3.6	0.094	2.828	0	129	72.4	131			
Surr: 4-Bromofluorobenzene	1.1		0.9425		117	80	120			

Sample ID	**1601B39-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Q116C2S**	Batch ID:	**23504**	RunNo:	**31851**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**975033**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.049	0.9737	0	118	71.5	122	0.283	20	
Toluene	1.2	0.049	0.9737	0	123	71.2	123	1.43	20	
Ethylbenzene	1.2	0.049	0.9737	0	123	75.2	130	1.14	20	
Xylenes, Total	3.6	0.097	2.921	0	123	72.4	131	0.850	20	
Surr: 4-Bromofluorobenzene	1.1		0.9737		117	80	120	0	0	

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**

10-Feb-16

Client: Terracon

Project: NM1-9 Landfarm

Sample ID	**MB-23489**	SampType:	**MBLK**	TestCode:	**EPA 6010B: Total Recoverable Metals**					
Client ID:	**PBW**	Batch ID:	**23489**	RunNo:	**31819**					
Prep Date:	**1/29/2016**	Analysis Date:	**2/1/2016**	SeqNo:	**973721**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	**LCS-23489**	SampType:	**LCS**	TestCode:	**EPA 6010B: Total Recoverable Metals**					
Client ID:	**LCSW**	Batch ID:	**23489**	RunNo:	**31819**					
Prep Date:	**1/29/2016**	Analysis Date:	**2/1/2016**	SeqNo:	**973722**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	50	1.0	50.00	0	99.3	80	120			
Magnesium	49	1.0	50.00	0	98.6	80	120			
Potassium	47	1.0	50.00	0	94.0	80	120			
Sodium	48	1.0	50.00	0	95.5	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**

10-Feb-16

Client: Terracon

Project: NM1-9 Landfarm

Sample ID	**mb-1**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R31826**	RunNo:	**31826**					
Prep Date:		Analysis Date:	**1/29/2016**	SeqNo:	**973885**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	**lcs-1**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R31826**	RunNo:	**31826**					
Prep Date:		Analysis Date:	**1/29/2016**	SeqNo:	**973886**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.72	20.00	80.00	0	97.2	90	110			

Sample ID	**mb-2**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R31826**	RunNo:	**31826**					
Prep Date:		Analysis Date:	**1/29/2016**	SeqNo:	**973909**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	**lcs-2**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R31826**	RunNo:	**31826**					
Prep Date:		Analysis Date:	**1/29/2016**	SeqNo:	**973910**	Units:	**mg/L CaCO3**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.48	20.00	80.00	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**
10-Feb-16

Client: Terracon
Project: NM1-9 Landfarm

Sample ID	**1601B39-004ADUP**	SampType:	**DUP**	TestCode:	**Specific Gravity**
Client ID:	**Q116IW**	Batch ID:	**R31910**	RunNo:	**31910**
Prep Date:		Analysis Date:	**2/4/2016**	SeqNo:	**976402** Units:

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	1.003	0						0.0499	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1601B39**
10-Feb-16

Client: Terracon
Project: NM1-9 Landfarm

Sample ID	**MB-23514**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**23514**	RunNo:	**31863**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**974947**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-23514**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**23514**	RunNo:	**31863**					
Prep Date:	**2/1/2016**	Analysis Date:	**2/2/2016**	SeqNo:	**974948**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1010	20.0	1000	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TER-Alb | Work Order Number: 1601B39 | RcptNo: 1

Received by/date: AT 01/29/16

Logged By: Anne Thorne 1/29/2016 11:50:00 AM Anne Thorne

Completed By: Anne Thorne 1/29/2016 Anne Thorne

Reviewed By: JA 01/29/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2 (<2 or >12 unless noted)

Adjusted?

Checked by: AT 01/29/16

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5 8	Good	Not Present			

Chain-of-Custody Record

ient: Tetra Tech

ailing Address: 4905 Hawkins NE Alb, NM 87109

hone #: 505-797-4287

mail or Fax#: mark.hillier@tetratech.com

VQC Package: ☒ Standard ☐ Level 4 (Full Validation)

ccreditation: ☐ NELAP ☐ Other

EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush

Project Name: NM1-9 Landfarm

Project #: 6615B040

Project Manager: M. Hillier

Sampler: M. Hillier

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.8

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1601839	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	specific gravity	Sodium Absorption Ratio	Total Hardness	Cations/Anion Balance	Air Bubbles (Y or N)
1/28/16	1250	S	Q116C2S	(1) 40Z		-001	X			X												
"	1315	S	Q116C1	"		-002	X			X												
"	1345	S	Q116C2N	"		-003	X			X												
"	1440	W	Q116IW	3		-004												X	X	X	X	

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/29	11:50			1/29/16	11:50

Remarks: For water sample, analyze per Lab ID 1510070-001 10% discount

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

July 15, 2016

Mike Meyer

Terracon
4905 Hawkins, NE
Albuquerque, NM 87109
TEL: (505) 797-4287
FAX (505) 797-4288

RE: Agua Moss OrderNo.: 1606G14

Dear Mike Meyer:

Hall Environmental Analysis Laboratory received 16 sample(s) on 6/29/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1-1-36"
Project: Agua Moss
Collection Date: 6/28/2016 9:30:00 AM
Lab ID: 1606G14-001 **Matrix:** SOIL **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	280	30		mg/Kg	20	7/7/2016 3:44:55 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/30/2016 1:44:04 PM	26147
Toluene	ND	0.047		mg/Kg	1	6/30/2016 1:44:04 PM	26147
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2016 1:44:04 PM	26147
Xylenes, Total	ND	0.094		mg/Kg	1	6/30/2016 1:44:04 PM	26147
Surr: 4-Bromofluorobenzene	99.4	80-120		%Rec	1	6/30/2016 1:44:04 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1-3-36"
Project: Agua Moss
Collection Date: 6/28/2016 10:15:00 AM
Lab ID: 1606G14-002
Matrix: SOIL
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	59	30		mg/Kg	20	7/7/2016 3:57:19 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/30/2016 2:08:32 PM	26147
Toluene	ND	0.049		mg/Kg	1	6/30/2016 2:08:32 PM	26147
Ethylbenzene	ND	0.049		mg/Kg	1	6/30/2016 2:08:32 PM	26147
Xylenes, Total	ND	0.098		mg/Kg	1	6/30/2016 2:08:32 PM	26147
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	6/30/2016 2:08:32 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1-2-36"
Project: Agua Moss
Collection Date: 6/28/2016 9:55:00 AM
Lab ID: 1606G14-003
Matrix: SOIL
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	18		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	870	30		mg/Kg	20	7/7/2016 4:09:44 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/30/2016 2:32:57 PM	26147
Toluene	ND	0.048		mg/Kg	1	6/30/2016 2:32:57 PM	26147
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2016 2:32:57 PM	26147
Xylenes, Total	ND	0.096		mg/Kg	1	6/30/2016 2:32:57 PM	26147
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	1	6/30/2016 2:32:57 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1-4-36"
Project: Agua Moss
Collection Date: 6/28/2016 10:20:00 AM
Lab ID: 1606G14-004 **Matrix:** SOIL **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	270	30		mg/Kg	20	7/7/2016 4:22:09 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	6/30/2016 2:57:22 PM	26147
Toluene	ND	0.046		mg/Kg	1	6/30/2016 2:57:22 PM	26147
Ethylbenzene	ND	0.046		mg/Kg	1	6/30/2016 2:57:22 PM	26147
Xylenes, Total	ND	0.091		mg/Kg	1	6/30/2016 2:57:22 PM	26147
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	6/30/2016 2:57:22 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2S-1-36"
Project: Agua Moss
Collection Date: 6/28/2016 10:55:00 AM
Lab ID: 1606G14-005 **Matrix:** SOIL **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	150	30		mg/Kg	20	7/7/2016 4:34:34 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/30/2016 3:21:51 PM	26147
Toluene	ND	0.049		mg/Kg	1	6/30/2016 3:21:51 PM	26147
Ethylbenzene	ND	0.049		mg/Kg	1	6/30/2016 3:21:51 PM	26147
Xylenes, Total	ND	0.098		mg/Kg	1	6/30/2016 3:21:51 PM	26147
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	6/30/2016 3:21:51 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1606G14-006 **Matrix:** SOIL

Client Sample ID: C2S-2-36"
Collection Date: 6/28/2016 11:05:00 AM
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	20		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	170	30		mg/Kg	20	7/7/2016 4:46:58 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/30/2016 5:24:04 PM	26147
Toluene	ND	0.050		mg/Kg	1	6/30/2016 5:24:04 PM	26147
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2016 5:24:04 PM	26147
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2016 5:24:04 PM	26147
Surr: 4-Bromofluorobenzene	95.5	80-120		%Rec	1	6/30/2016 5:24:04 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2S-3-36"
Project: Agua Moss
Collection Date: 6/28/2016 11:10:00 AM
Lab ID: 1606G14-007 **Matrix:** SOIL **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	98	30		mg/Kg	20	7/7/2016 5:24:11 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/30/2016 5:48:36 PM	26147
Toluene	ND	0.048		mg/Kg	1	6/30/2016 5:48:36 PM	26147
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2016 5:48:36 PM	26147
Xylenes, Total	ND	0.095		mg/Kg	1	6/30/2016 5:48:36 PM	26147
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	6/30/2016 5:48:36 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1606G14-008 **Matrix:** SOIL

Client Sample ID: C2S-4-36"
Collection Date: 6/28/2016 11:20:00 AM
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	110	30		mg/Kg	20	7/7/2016 5:36:36 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/30/2016 6:13:05 PM	26147
Toluene	ND	0.048		mg/Kg	1	6/30/2016 6:13:05 PM	26147
Ethylbenzene	ND	0.048		mg/Kg	1	6/30/2016 6:13:05 PM	26147
Xylenes, Total	ND	0.095		mg/Kg	1	6/30/2016 6:13:05 PM	26147
Surr: 4-Bromofluorobenzene	96.1	80-120		%Rec	1	6/30/2016 6:13:05 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-1-36"
Project: Agua Moss
Collection Date: 6/28/2016 11:30:00 AM
Lab ID: 1606G14-009
Matrix: SOIL
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	180	30		mg/Kg	20	7/7/2016 5:49:01 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/30/2016 6:37:29 PM	26147
Toluene	ND	0.049		mg/Kg	1	6/30/2016 6:37:29 PM	26147
Ethylbenzene	ND	0.049		mg/Kg	1	6/30/2016 6:37:29 PM	26147
Xylenes, Total	ND	0.099		mg/Kg	1	6/30/2016 6:37:29 PM	26147
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	6/30/2016 6:37:29 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-2-36"
Project: Agua Moss
Collection Date: 6/28/2016 11:42:00 AM
Lab ID: 1606G14-010 **Matrix:** SOIL **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	18		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	320	30		mg/Kg	20	7/7/2016 6:01:26 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	6/30/2016 7:01:50 PM	26147
Toluene	ND	0.047		mg/Kg	1	6/30/2016 7:01:50 PM	26147
Ethylbenzene	ND	0.047		mg/Kg	1	6/30/2016 7:01:50 PM	26147
Xylenes, Total	ND	0.093		mg/Kg	1	6/30/2016 7:01:50 PM	26147
Surr: 4-Bromofluorobenzene	98.3	80-120		%Rec	1	6/30/2016 7:01:50 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-3-36"
Project: Agua Moss
Collection Date: 6/28/2016 11:40:00 AM
Lab ID: 1606G14-011
Matrix: SOIL
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	1000	30		mg/Kg	20	7/7/2016 6:13:50 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/30/2016 7:26:07 PM	26147
Toluene	ND	0.050		mg/Kg	1	6/30/2016 7:26:07 PM	26147
Ethylbenzene	ND	0.050		mg/Kg	1	6/30/2016 7:26:07 PM	26147
Xylenes, Total	ND	0.10		mg/Kg	1	6/30/2016 7:26:07 PM	26147
Surr: 4-Bromofluorobenzene	94.1	80-120		%Rec	1	6/30/2016 7:26:07 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-4-36"
Project: Agua Moss
Collection Date: 6/28/2016 12:00:00 PM
Lab ID: 1606G14-012
Matrix: SOIL
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	ND	19		mg/Kg	1	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	91	30		mg/Kg	20	7/7/2016 6:26:14 PM	26268
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/30/2016 7:50:29 PM	26147
Toluene	ND	0.049		mg/Kg	1	6/30/2016 7:50:29 PM	26147
Ethylbenzene	ND	0.049		mg/Kg	1	6/30/2016 7:50:29 PM	26147
Xylenes, Total	ND	0.097		mg/Kg	1	6/30/2016 7:50:29 PM	26147
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	6/30/2016 7:50:29 PM	26147

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C1-6"
Project: Agua Moss
Collection Date: 6/28/2016 10:25:00 AM
Lab ID: 1606G14-013
Matrix: AQUEOUS
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	2800	1900		mg/Kg	100	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	ND	30		mg/Kg	20	7/8/2016 12:33:58 PM	26308

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2S-1-6"
Project: Agua Moss
Collection Date: 6/28/2016 12:10:00 PM
Lab ID: 1606G14-014 **Matrix:** AQUEOUS **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	3900	1900		mg/Kg	100	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	430	30		mg/Kg	20	7/8/2016 12:46:23 PM	26308

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Terracon
Client Sample ID: C2N-1-6"
Project: Agua Moss
Collection Date: 6/28/2016 12:15:00 PM
Lab ID: 1606G14-015 **Matrix:** AQUEOUS **Received Date:** 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 418.1: TPH						Analyst: **KJH**	
Petroleum Hydrocarbons, TR	6000	1900		mg/Kg	100	7/6/2016	26214
EPA METHOD 300.0: ANIONS						Analyst: **LGT**	
Chloride	290	30		mg/Kg	20	7/8/2016 12:58:48 PM	26308

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1606G14**
Date Reported: **7/15/2016**

CLIENT: Terracon
Project: Agua Moss
Lab ID: 1606G14-016 **Matrix:** AQUEOUS

Client Sample ID: NM1-9IW16Q2
Collection Date: 6/28/2016 12:40:00 PM
Received Date: 6/29/2016 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
SM2340B: HARDNESS						Analyst:	**MED**
Hardness (As CaCO3)	930	6.6		mg/L	1	7/8/2016 10:30:00 AM	R35523
SODIUM ADSORPTION RATIO						Analyst:	**MED**
Calcium	300	1.0		mg/L	1	7/8/2016 10:30:00 AM	R35523
Magnesium	44	1.0		mg/L	1	7/8/2016 10:30:00 AM	R35523
Sodium	5200	1.0		mg/L	1	7/8/2016 10:30:00 AM	R35523
Sodium Absorption Ratio	74	0			1	7/8/2016 10:30:00 AM	R35523
SPECIFIC GRAVITY						Analyst:	**JRR**
Specific Gravity	1.006	0			1	6/30/2016 11:55:00 AM	R35345
EPA METHOD 300.0: ANIONS						Analyst:	**LGT**
Fluoride	ND	2.0		mg/L	20	6/29/2016 6:42:07 PM	R35326
Chloride	9000	500		mg/L	1E	7/6/2016 1:28:04 AM	A35449
Bromide	17	0.50		mg/L	5	7/6/2016 1:15:39 AM	A35449
Phosphorus, Orthophosphate (As P)	ND	2.5		mg/L	5	6/29/2016 6:29:42 PM	R35326
Sulfate	100	2.5		mg/L	5	6/29/2016 6:29:42 PM	R35326
Nitrate+Nitrite as N	ND	10		mg/L	50	7/7/2016 2:21:46 PM	R35506
SM2510B: SPECIFIC CONDUCTANCE						Analyst:	**JRR**
Conductivity	29000	10		µmhos/cm	10	7/6/2016 7:52:42 AM	R35440
SM2320B: ALKALINITY						Analyst:	**JRR**
Bicarbonate (As CaCO3)	681.8	20.00		mg/L CaCO3	1	6/29/2016 9:55:57 PM	R35350
Carbonate (As CaCO3)	ND	2.000		mg/L CaCO3	1	6/29/2016 9:55:57 PM	R35350
Total Alkalinity (as CaCO3)	681.8	20.00		mg/L CaCO3	1	6/29/2016 9:55:57 PM	R35350
SM2540C MOD: TOTAL DISSOLVED SOLIDS						Analyst:	**KS**
Total Dissolved Solids	15500	2000	*D	mg/L	1	7/6/2016 4:54:00 PM	26208
EPA METHOD 6010B: DISSOLVED METALS						Analyst:	**MED**
Calcium	300	5.0		mg/L	5	7/8/2016 12:27:45 PM	A35523
Iron	0.75	0.020		mg/L	1	7/8/2016 11:47:26 AM	A35523
Magnesium	44	1.0		mg/L	1	7/8/2016 11:47:26 AM	A35523
Potassium	88	1.0		mg/L	1	7/8/2016 11:47:26 AM	A35523
Sodium	5200	100		mg/L	100	7/8/2016 12:41:39 PM	A35523

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**

15-Jul-16

Client: Terracon

Project: Agua Moss

Sample ID	**MB-26268**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**26268**		RunNo:	**35474**				
Prep Date:	**7/6/2016**	Analysis Date:	**7/6/2016**		SeqNo:	**1098081**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-26268**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**26268**		RunNo:	**35474**				
Prep Date:	**7/6/2016**	Analysis Date:	**7/6/2016**		SeqNo:	**1098082**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.7	90	110			

Sample ID	**MB-26268**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**26268**		RunNo:	**35519**				
Prep Date:	**7/6/2016**	Analysis Date:	**7/7/2016**		SeqNo:	**1099749**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-26268**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**26268**		RunNo:	**35519**				
Prep Date:	**7/6/2016**	Analysis Date:	**7/7/2016**		SeqNo:	**1099750**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.6	90	110			

Sample ID	**MB-26308**	SampType:	**MBLK**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**PBS**	Batch ID:	**26308**		RunNo:	**35546**				
Prep Date:	**7/8/2016**	Analysis Date:	**7/8/2016**		SeqNo:	**1100588**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-26308**	SampType:	**LCS**		TestCode:	**EPA Method 300.0: Anions**				
Client ID:	**LCSS**	Batch ID:	**26308**		RunNo:	**35546**				
Prep Date:	**7/8/2016**	Analysis Date:	**7/8/2016**		SeqNo:	**1100589**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.1	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**
15-Jul-16

Client: Terracon
Project: Agua Moss

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R35326**	RunNo: **35326**
Prep Date:	Analysis Date: **6/29/2016**	SeqNo: **1092939** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.10								
Phosphorus, Orthophosphate (As P	ND	0.50								
Sulfate	ND	0.50								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **R35326**	RunNo: **35326**
Prep Date:	Analysis Date: **6/29/2016**	SeqNo: **1092940** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	0.54	0.10	0.5000	0	108	90	110			
Phosphorus, Orthophosphate (As P	4.7	0.50	5.000	0	94.7	90	110			
Sulfate	9.7	0.50	10.00	0	96.6	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **A35449**	RunNo: **35449**
Prep Date:	Analysis Date: **7/5/2016**	SeqNo: **1097052** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	0.50								
Bromide	ND	0.10								

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSW**	Batch ID: **A35449**	RunNo: **35449**
Prep Date:	Analysis Date: **7/5/2016**	SeqNo: **1097053** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	4.9	0.50	5.000	0	98.7	90	110			
Bromide	2.5	0.10	2.500	0	101	90	110			

Sample ID **MB**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBW**	Batch ID: **R35506**	RunNo: **35506**
Prep Date:	Analysis Date: **7/7/2016**	SeqNo: **1099031** Units: **mg/L**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	ND	0.20								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**

15-Jul-16

Client: Terracon

Project: Agua Moss

Sample ID **LCS**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**							
Client ID: **LCSW**	Batch ID: **R35506**	RunNo: **35506**							
Prep Date:	Analysis Date: **7/7/2016**	SeqNo: **1099032**	Units: **mg/L**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrate+Nitrite as N	3.4	0.20	3.500	0	95.7	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**

15-Jul-16

Client: Terracon

Project: Agua Moss

Sample ID	**MB-26214**	SampType:	**MBLK**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**PBS**	Batch ID:	**26214**	RunNo:	**35450**					
Prep Date:	**7/5/2016**	Analysis Date:	**7/6/2016**	SeqNo:	**1097109**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	ND	20								

Sample ID	**LCS-26214**	SampType:	**LCS**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS**	Batch ID:	**26214**	RunNo:	**35450**					
Prep Date:	**7/5/2016**	Analysis Date:	**7/6/2016**	SeqNo:	**1097110**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	100	20	100.0	0	101	83.4	127			

Sample ID	**LCSD-26214**	SampType:	**LCSD**	TestCode:	**EPA Method 418.1: TPH**					
Client ID:	**LCSS02**	Batch ID:	**26214**	RunNo:	**35450**					
Prep Date:	**7/5/2016**	Analysis Date:	**7/6/2016**	SeqNo:	**1097111**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Petroleum Hydrocarbons, TR	97	20	100.0	0	97.3	83.4	127	3.88	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**

15-Jul-16

Client: Terracon

Project: Agua Moss

Sample ID	**MB-26147**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**26147**	RunNo:	**35363**					
Prep Date:	**6/29/2016**	Analysis Date:	**6/30/2016**	SeqNo:	**1093895**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.98		1.000		97.6	80	120			

Sample ID	**LCS-26147**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**26147**	RunNo:	**35363**					
Prep Date:	**6/29/2016**	Analysis Date:	**6/30/2016**	SeqNo:	**1093896**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	75.3	123			
Toluene	0.96	0.050	1.000	0	95.9	80	124			
Ethylbenzene	0.95	0.050	1.000	0	95.2	82.8	121			
Xylenes, Total	2.8	0.10	3.000	0	93.0	83.9	122			
Surr: 4-Bromofluorobenzene	1.0		1.000		103	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**

15-Jul-16

Client: Terracon

Project: Agua Moss

Sample ID	**MB-A**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Dissolved Metals**					
Client ID:	**PBW**	Batch ID:	**A35523**	RunNo:	**35523**					
Prep Date:		Analysis Date:	**7/8/2016**	SeqNo:	**1099959**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	ND	1.0								
Iron	ND	0.020								
Magnesium	ND	1.0								
Potassium	ND	1.0								
Sodium	ND	1.0								

Sample ID	**LCS-A**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Dissolved Metals**					
Client ID:	**LCSW**	Batch ID:	**A35523**	RunNo:	**35523**					
Prep Date:		Analysis Date:	**7/8/2016**	SeqNo:	**1099960**	Units:	**mg/L**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Calcium	53	1.0	50.00	0	105	80	120			
Iron	0.49	0.020	0.5000	0	98.0	80	120			
Magnesium	53	1.0	50.00	0	106	80	120			
Potassium	51	1.0	50.00	0	102	80	120			
Sodium	51	1.0	50.00	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**
15-Jul-16

Client: Terracon
Project: Agua Moss

Sample ID	**mb-1**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R35350**	RunNo:	**35350**					
Prep Date:		Analysis Date:	**6/29/2016**	SeqNo:	**1093478**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	**lcs-1**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R35350**	RunNo:	**35350**					
Prep Date:		Analysis Date:	**6/29/2016**	SeqNo:	**1093479**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	77.96	20.00	80.00	0	97.5	90	110			

Sample ID	**mb-2**	SampType:	**mblk**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**PBW**	Batch ID:	**R35350**	RunNo:	**35350**					
Prep Date:		Analysis Date:	**6/29/2016**	SeqNo:	**1093502**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	ND	20.00								

Sample ID	**lcs-2**	SampType:	**lcs**	TestCode:	**SM2320B: Alkalinity**					
Client ID:	**LCSW**	Batch ID:	**R35350**	RunNo:	**35350**					
Prep Date:		Analysis Date:	**6/29/2016**	SeqNo:	**1093503**	Units:	**mg/L CaCO3**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Alkalinity (as CaCO3)	78.28	20.00	80.00	0	97.9	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**
15-Jul-16

Client: Terracon
Project: Agua Moss

Sample ID	**1606G14-016ADUP**	SampType:	**DUP**	TestCode:	**Specific Gravity**					
Client ID:	**NM1-9IW16Q2**	Batch ID:	**R35345**	RunNo:	**35345**					
Prep Date:		Analysis Date:	**6/30/2016**	SeqNo:	**1093385**	Units:				

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Specific Gravity	1.005	0						0.119	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G14**
15-Jul-16

Client: Terracon
Project: Agua Moss

Sample ID	**MB-26208**	SampType:	**MBLK**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**PBW**	Batch ID:	**26208**	RunNo:	**35456**					
Prep Date:	**7/5/2016**	Analysis Date:	**7/6/2016**	SeqNo:	**1097402**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	ND	20.0								

Sample ID	**LCS-26208**	SampType:	**LCS**	TestCode:	**SM2540C MOD: Total Dissolved Solids**					
Client ID:	**LCSW**	Batch ID:	**26208**	RunNo:	**35456**					
Prep Date:	**7/5/2016**	Analysis Date:	**7/6/2016**	SeqNo:	**1097403**	Units:	**mg/L**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Total Dissolved Solids	1020	20.0	1000	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

ENVIRONMENTAL ANALYSIS LABORATORY
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: TER-Alb | Work Order Number: 1606G14 | RcptNo: 1

Received by/date: AT 06/29/16

Logged By: Ashley Gallegos 6/29/2016 10:30:00 AM

Completed By: Ashley Gallegos 6/29/2016 11:12:09 AM

Reviewed By: 06/29/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Client		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 2
(<2 or >12 unless noted)
Adjusted? NO
Checked by: aJ

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.6	Good	Not Present			

Chain-of-Custody Record

Client: TERRACON

Mailing Address: 4905 HAWKINS NE
ABQ NM 87109

Phone #: 505-222-5795

email or Fax#: MIKE.MEYER@TERRACON.COM

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☒ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: AGUA MOSS

Project #: 66157040

Project Manager: MIKE MEYER

Sampler: MLM

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1L0010G14	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B GRO / DRO / MRO	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS) SPECIATE GRO/DRO	RCRA 8 Metals SPLIT	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	BTEX 8021B	TPH 418.1	CHLORIDES 300.1		Air Bubbles (Y or N)
1/28/16	0930	S	C1-1-36"	4oz		-001												✓	✓	✓		
	10:15	S	C1-3-36"			-002												✓	✓	✓		
	09:55	S	C1-2-36"			-003												✓	✓	✓		
	10:20	S	C1-4-36"			-004												✓	✓	✓		
	10:55	S	C2S-1-36"			-005												✓	✓	✓		
	11:05	S	C2S-2-36"			-006												✓	✓	✓		
	11:10	S	C2S-3-36"			-007												✓	✓	✓		
	11:20	S	C2S-4-36"			-008												✓	✓	✓		
	11:30	S	C2N-1-36"			-009												✓	✓	✓		
	11:42	S	C2N-2-36"			-010												✓	✓	✓		
	11:40	S	C2N-3-36"			-011												✓	✓	✓		
	12:00	S	C2N-4-36"			-012												✓	✓	✓		

Date	Time	Relinquished by:	Received by:	Date	Time
1/29/16	1240 1030	M. Meyer		1/29/16	1230

Remarks:

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

Chain-of-Custody Record

Client: Terracon

Mailing Address: 4905 Hawkins NE

Phone #: 505-222-5595

email or Fax#: Mike.meyer@Terracon.com

QA/QC Package: ☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☑ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time: ☑ Standard ☐ Rush _____

Project Name: Agua Moss

Project #: 66157040

Project Manager: ~~Mark Hitter~~ Mike Meyer

Sampler:

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.6

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No.	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	~~BTEX + MTBE + TMB's (8021)~~	TPH 418.1	Chloride 300.1		Air Bubbles (Y or N)
						1606G14																
12/8/16	10:25	S	C1-6"	4oz		-013																
	12:10	S	C2S-1-6"	4oz		-014																
	12:15	S	C2N-1-6"	4oz		-015																
	1240	W	NM1-9IW16Q2	4 Bottles		-016						1	1	1	1							

Date: 12/9/16 Time: 10:30 Relinquished by: M. Meyer Received by: _____ Date: 12/9/16 Time: 1030

Date: _____ Time: _____ Relinquished by: _____ Received by: _____ Date: _____ Time: _____

Remarks: Major cat/anions: chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium & sodium. ON WATER water analyses per 1510070-001

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 22, 2016

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Sunco Landfarm OrderNo.: 1609955

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/17/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1609955**
Date Reported: **9/22/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 - North
Project: Sunco Landfarm
Collection Date: 9/16/2016 9:50:00 AM
Lab ID: 1609955-001 **Matrix:** SOIL **Received Date:** 9/17/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	9/21/2016 4:12:28 PM	27605
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	9/21/2016 4:12:28 PM	27605
Surr: DNOP	90.7	70-130		%Rec	1	9/21/2016 4:12:28 PM	27605
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/21/2016 12:47:57 AM	27570
Surr: BFB	81.7	68.3-144		%Rec	1	9/21/2016 12:47:57 AM	27570
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/21/2016 12:47:57 AM	27570
Toluene	ND	0.047		mg/Kg	1	9/21/2016 12:47:57 AM	27570
Ethylbenzene	ND	0.047		mg/Kg	1	9/21/2016 12:47:57 AM	27570
Xylenes, Total	ND	0.095		mg/Kg	1	9/21/2016 12:47:57 AM	27570
Surr: 4-Bromofluorobenzene	97.2	80-120		%Rec	1	9/21/2016 12:47:57 AM	27570

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1609955**
Date Reported: **9/22/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 - South
Project: Sunco Landfarm
Collection Date: 9/16/2016 10:00:00 AM
Lab ID: 1609955-002 **Matrix:** SOIL **Received Date:** 9/17/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	9/21/2016 4:34:31 PM	27605
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/21/2016 4:34:31 PM	27605
Surr: DNOP	103	70-130		%Rec	1	9/21/2016 4:34:31 PM	27605
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	9/21/2016 1:11:24 AM	27570
Surr: BFB	81.0	68.3-144		%Rec	1	9/21/2016 1:11:24 AM	27570
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/21/2016 1:11:24 AM	27570
Toluene	ND	0.050		mg/Kg	1	9/21/2016 1:11:24 AM	27570
Ethylbenzene	ND	0.050		mg/Kg	1	9/21/2016 1:11:24 AM	27570
Xylenes, Total	ND	0.10		mg/Kg	1	9/21/2016 1:11:24 AM	27570
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	1	9/21/2016 1:11:24 AM	27570

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1609955**
Date Reported: **9/22/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1
Project: Sunco Landfarm
Collection Date: 9/16/2016 10:10:00 AM
Lab ID: 1609955-003 **Matrix:** SOIL **Received Date:** 9/17/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	9/21/2016 4:56:31 PM	27605
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/21/2016 4:56:31 PM	27605
Surr: DNOP	114	70-130		%Rec	1	9/21/2016 4:56:31 PM	27605
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/21/2016 1:34:45 AM	27570
Surr: BFB	79.4	68.3-144		%Rec	1	9/21/2016 1:34:45 AM	27570
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/21/2016 1:34:45 AM	27570
Toluene	ND	0.048		mg/Kg	1	9/21/2016 1:34:45 AM	27570
Ethylbenzene	ND	0.048		mg/Kg	1	9/21/2016 1:34:45 AM	27570
Xylenes, Total	ND	0.095		mg/Kg	1	9/21/2016 1:34:45 AM	27570
Surr: 4-Bromofluorobenzene	93.2	80-120		%Rec	1	9/21/2016 1:34:45 AM	27570

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609955**

22-Sep-16

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**LCS-27605**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**LCSS**	Batch ID:	**27605**	RunNo:	**37357**
Prep Date:	**9/20/2016**	Analysis Date:	**9/21/2016**	SeqNo:	**1161362** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.3	62.6	124			
Surr: DNOP	4.3		5.000		86.9	70	130			

Sample ID	**MB-27605**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**
Client ID:	**PBS**	Batch ID:	**27605**	RunNo:	**37357**
Prep Date:	**9/20/2016**	Analysis Date:	**9/21/2016**	SeqNo:	**1161363** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.5		10.00		94.9	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609955**

22-Sep-16

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-27570**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**27570**	RunNo:	**37324**					
Prep Date:	**9/19/2016**	Analysis Date:	**9/20/2016**	SeqNo:	**1159754**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	790		1000		79.3	68.3	144			

Sample ID	**LCS-27570**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**27570**	RunNo:	**37324**					
Prep Date:	**9/19/2016**	Analysis Date:	**9/20/2016**	SeqNo:	**1159755**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.7	74.6	123			
Surr: BFB	880		1000		88.2	68.3	144			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1609955**

22-Sep-16

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-27570**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**27570**	RunNo:	**37324**					
Prep Date:	**9/19/2016**	Analysis Date:	**9/20/2016**	SeqNo:	**1159778**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		95.9	80	120			

Sample ID	**LCS-27570**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**27570**	RunNo:	**37324**					
Prep Date:	**9/19/2016**	Analysis Date:	**9/20/2016**	SeqNo:	**1159779**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.1	75.3	123			
Toluene	0.93	0.050	1.000	0	93.0	80	124			
Ethylbenzene	0.97	0.050	1.000	0	96.9	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.3	83.9	122			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1609955 RcptNo: 1

Received by/date: 09/17/16

Logged By: Lindsay Mangin 9/17/2016 8:00:00 AM

Completed By: Lindsay Mangin 9/17/2016 8:50:43 AM

Reviewed By: JC 09/19/16

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	# of preserved bottles checked for pH:
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	(<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted?
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by:

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Client: Rule Engineering, LLC	Turn-Around Time: ☒ Standard ☐ Rush
Mailing Address: 501 Airport Dr, Suite 205	Project Name: Sunco Landfarm
Farmington, NM 87401	Project #:
Phone #: (505) 716-2787	
Email or Fax#: hwoods@ruleengineering.com	Project Manager: Heather Woods
QA/QC Package: Standard ☐ Level 4 (Full Validation)	Sampler: HW/JV
Accreditation: NELAP ☐ Other	On Ice: ☒ Yes ☐ No
EDD (Type)	Sample Temperature: 4.7

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1609155	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
9/16	950	Soil	Cell #2-North	(1) 4oz Glass	Cold	-001	X		X									
9/16	1000	Soil	Cell #2-South	(1) 4oz Glass	Cold	-002	X		X									
9/16	1010	Soil	Cell #1	(1) 4oz Glass	Cold	-003	X		X									

NES Hall

Date:	Time:	Relinquished by:	Received by:	Date	Time
9/16	1630	Heather M. Woods	Christine Walters	9/16/16	1630
9/16	1800	Christine Walters		09/17/16	0800

Remarks:
Direct Bill to: troybal@mrtruckinc.com
Aqua Moss LLC
P.O. Box 1600
Farmington, NM 87499

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 04, 2017

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Sunco Landfarm OrderNo.: 1612914

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/15/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:10:00 PM
Lab ID: 1612914-001 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.9	10		mg/Kg	1	12/20/2016 11:55:53 PM	29273
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	12/20/2016 11:55:53 PM	29273
Surr: DNOP	98.1	0	70-130		%Rec	1	12/20/2016 11:55:53 PM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.98	4.7		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Surr: BFB	91.5	0	68.3-144		%Rec	1	12/20/2016 2:15:37 PM	29267
EPA METHOD 8021B: VOLATILES							Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.011	0.095		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Benzene	ND	0.0054	0.024		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Toluene	ND	0.0048	0.047		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Ethylbenzene	ND	0.0046	0.047		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Xylenes, Total	ND	0.014	0.095		mg/Kg	1	12/20/2016 2:15:37 PM	29267
Surr: 4-Bromofluorobenzene	103	0	80-120		%Rec	1	12/20/2016 2:15:37 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	15	6.0	6.0		mg/Kg	20	12/20/2016 1:57:48 PM	29304
Chloride	640	12	30		mg/Kg	20	12/20/2016 1:57:48 PM	29304
Nitrogen, Nitrite (As N)	ND	0.16	0.30		mg/Kg	1	12/20/2016 1:20:35 PM	29304
Bromide	3.0	0.16	0.30		mg/Kg	1	12/20/2016 1:20:35 PM	29304
Nitrogen, Nitrate (As N)	1.8	0.044	0.30		mg/Kg	1	12/20/2016 1:20:35 PM	29304
Phosphorus, Orthophosphate (As P)	0.29	0.23	1.5	J	mg/Kg	1	12/20/2016 1:20:35 PM	29304
Sulfate	250	5.4	30		mg/Kg	20	12/20/2016 1:57:48 PM	29304
EPA METHOD 7471: MERCURY							Analyst: **DBD**	
Mercury	0.015	0.00057	0.033	J	mg/Kg	1	12/21/2016 9:43:23 AM	29315
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Arsenic	2.4	0.87	2.4	J	mg/Kg	1	12/22/2016 10:43:35 AM	29325
Barium	110	0.070	0.098		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Cadmium	ND	0.062	0.098		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Calcium	15000	120	120		mg/Kg	5	12/22/2016 11:43:26 AM	29325
Chromium	7.2	0.092	0.29		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Copper	5.4	0.12	0.29		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Iron	13000	74	240		mg/Kg	100	12/29/2016 10:59:22 AM	29325
Lead	3.2	0.17	0.24		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Magnesium	4200	5.9	24		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Manganese	170	0.052	0.098		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Potassium	1500	8.0	49		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Selenium	ND	1.8	2.4		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Silver	ND	0.061	0.24		mg/Kg	1	12/22/2016 10:43:35 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:10:00 PM
Lab ID: 1612914-001 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Sodium	490	7.1	24		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Uranium	ND	1.1	4.9		mg/Kg	1	12/22/2016 10:43:35 AM	29325
Zinc	23	0.34	2.4		mg/Kg	1	12/22/2016 10:43:35 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:00:00 PM
Lab ID: 1612914-002 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.8	10		mg/Kg	1	12/21/2016 12:17:24 AM	29273
Motor Oil Range Organics (MRO)	ND	50	50		mg/Kg	1	12/21/2016 12:17:24 AM	29273
Surr: DNOP	82.0	0	70-130		%Rec	1	12/21/2016 12:17:24 AM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.97	4.7		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Surr: BFB	90.6	0	68.3-144		%Rec	1	12/20/2016 6:33:35 PM	29267
EPA METHOD 8021B: VOLATILES							Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.011	0.094		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Benzene	ND	0.0054	0.024		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Toluene	ND	0.0048	0.047		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Ethylbenzene	ND	0.0046	0.047		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Xylenes, Total	ND	0.014	0.094		mg/Kg	1	12/20/2016 6:33:35 PM	29267
Surr: 4-Bromofluorobenzene	99.7	0	80-120		%Rec	1	12/20/2016 6:33:35 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	0.94	0.30	0.30		mg/Kg	1	12/20/2016 2:10:13 PM	29304
Chloride	730	12	30		mg/Kg	20	12/20/2016 2:22:39 PM	29304
Nitrogen, Nitrite (As N)	ND	0.16	0.30		mg/Kg	1	12/20/2016 2:10:13 PM	29304
Bromide	2.1	0.16	0.30		mg/Kg	1	12/20/2016 2:10:13 PM	29304
Nitrogen, Nitrate (As N)	1.9	0.044	0.30		mg/Kg	1	12/20/2016 2:10:13 PM	29304
Phosphorus, Orthophosphate (As P)	ND	0.23	1.5		mg/Kg	1	12/20/2016 2:10:13 PM	29304
Sulfate	48	0.27	1.5		mg/Kg	1	12/20/2016 2:10:13 PM	29304
EPA METHOD 7471: MERCURY							Analyst: **DBD**	
Mercury	0.014	0.00055	0.032	J	mg/Kg	1	12/21/2016 9:45:11 AM	29315
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Arsenic	3.1	0.88	2.5		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Barium	150	0.071	0.099		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Cadmium	ND	0.063	0.099		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Calcium	48000	2400	2500		mg/Kg	100	12/22/2016 11:40:26 AM	29325
Chromium	7.5	0.094	0.30		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Copper	7.0	0.12	0.30		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Iron	15000	75	250		mg/Kg	100	12/22/2016 11:40:26 AM	29325
Lead	3.0	0.17	0.25		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Magnesium	5000	5.9	25		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Manganese	200	0.053	0.099		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Potassium	1600	8.1	50		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Selenium	ND	1.8	2.5		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Silver	ND	0.062	0.25		mg/Kg	1	12/22/2016 10:47:13 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:00:00 PM
Lab ID: 1612914-002 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Sodium	260	7.2	25		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Uranium	ND	1.1	5.0		mg/Kg	1	12/22/2016 10:47:13 AM	29325
Zinc	23	0.35	2.5		mg/Kg	1	12/22/2016 10:47:13 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 1:50:00 PM
Lab ID: 1612914-003 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	1.8	9.8		mg/Kg	1	12/21/2016 12:38:28 AM	29273
Motor Oil Range Organics (MRO)	ND	49	49		mg/Kg	1	12/21/2016 12:38:28 AM	29273
Surr: DNOP	95.0	0	70-130		%Rec	1	12/21/2016 12:38:28 AM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.94	4.6		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Surr: BFB	88.6	0	68.3-144		%Rec	1	12/20/2016 6:56:54 PM	29267
EPA METHOD 8021B: VOLATILES							Analyst: **NSB**	
Methyl tert-butyl ether (MTBE)	ND	0.011	0.092		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Benzene	ND	0.0052	0.023		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Toluene	ND	0.0047	0.046		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Ethylbenzene	ND	0.0045	0.046		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Xylenes, Total	ND	0.013	0.092		mg/Kg	1	12/20/2016 6:56:54 PM	29267
Surr: 4-Bromofluorobenzene	96.0	0	80-120		%Rec	1	12/20/2016 6:56:54 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Fluoride	1.5	0.30	0.30		mg/Kg	1	12/20/2016 2:35:03 PM	29304
Chloride	140	12	30		mg/Kg	20	12/20/2016 2:47:28 PM	29304
Nitrogen, Nitrite (As N)	ND	0.16	0.30		mg/Kg	1	12/20/2016 2:35:03 PM	29304
Bromide	2.3	0.16	0.30		mg/Kg	1	12/20/2016 2:35:03 PM	29304
Nitrogen, Nitrate (As N)	0.93	0.044	0.30		mg/Kg	1	12/20/2016 2:35:03 PM	29304
Phosphorus, Orthophosphate (As P)	ND	0.23	1.5		mg/Kg	1	12/20/2016 2:35:03 PM	29304
Sulfate	200	5.4	30		mg/Kg	20	12/20/2016 2:47:28 PM	29304
EPA METHOD 7471: MERCURY							Analyst: **DBD**	
Mercury	0.0056	0.00055	0.032	J	mg/Kg	1	12/21/2016 9:46:58 AM	29315
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Arsenic	2.1	0.85	2.4	J	mg/Kg	1	12/22/2016 10:56:34 AM	29325
Barium	110	0.068	0.096		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Cadmium	ND	0.061	0.096		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Calcium	15000	120	120		mg/Kg	5	12/22/2016 11:46:50 AM	29325
Chromium	2.6	0.090	0.29		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Copper	1.8	0.12	0.29		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Iron	5400	36	120		mg/Kg	50	12/22/2016 11:41:56 AM	29325
Lead	1.7	0.17	0.24		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Magnesium	1800	5.7	24		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Manganese	97	0.051	0.096		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Potassium	610	7.8	48		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Selenium	ND	1.7	2.4		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Silver	ND	0.060	0.24		mg/Kg	1	12/22/2016 10:56:34 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose
Project: Sunco Landfarm
Collection Date: 12/14/2016 1:50:00 PM
Lab ID: 1612914-003 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 6010B: SOIL METALS							Analyst: **MED**	
Sodium	230	7.0	24		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Uranium	ND	1.1	4.8		mg/Kg	1	12/22/2016 10:56:34 AM	29325
Zinc	9.5	0.33	2.4		mg/Kg	1	12/22/2016 10:56:34 AM	29325

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:50:00 PM
Lab ID: 1612914-004 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	290	18	99		mg/Kg	10	12/22/2016 2:35:52 AM	29273
Motor Oil Range Organics (MRO)	1200	500	500		mg/Kg	10	12/22/2016 2:35:52 AM	29273
Surr: DNOP	0	0	70-130	S	%Rec	10	12/22/2016 2:35:52 AM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	1.0	4.9		mg/Kg	1	12/20/2016 7:20:11 PM	29267
Surr: BFB	88.6	0	68.3-144		%Rec	1	12/20/2016 7:20:11 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Chloride	9.9	0.61	1.5		mg/Kg	1	12/20/2016 3:24:41 PM	29304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Treatment
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:37:00 PM
Lab ID: 1612914-005 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	250	19	100		mg/Kg	10	12/21/2016 1:21:11 AM	29273
Motor Oil Range Organics (MRO)	1800	510	510		mg/Kg	10	12/21/2016 1:21:11 AM	29273
Surr: DNOP	0	0	70-130	S	%Rec	10	12/21/2016 1:21:11 AM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.96	4.6		mg/Kg	1	12/20/2016 7:43:27 PM	29267
Surr: BFB	87.1	0	68.3-144		%Rec	1	12/20/2016 7:43:27 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Chloride	840	12	30		mg/Kg	20	12/20/2016 4:01:55 PM	29304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1612914**
Date Reported: **1/4/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Treatment
Project: Sunco Landfarm
Collection Date: 12/14/2016 2:45:00 PM
Lab ID: 1612914-006 **Matrix:** SOIL **Received Date:** 12/15/2016 8:10:00 AM

Analyses	Result	MDL	PQL	Qual	Units	DF	Date Analyzed	Batch ID
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS							Analyst: **TOM**	
Diesel Range Organics (DRO)	400	17	93		mg/Kg	10	12/22/2016 3:22:21 AM	29273
Motor Oil Range Organics (MRO)	2500	460	460		mg/Kg	10	12/22/2016 3:22:21 AM	29273
Surr: DNOP	0	0	70-130	S	%Rec	10	12/22/2016 3:22:21 AM	29273
EPA METHOD 8015D: GASOLINE RANGE							Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	0.99	4.8		mg/Kg	1	12/20/2016 8:06:47 PM	29267
Surr: BFB	87.1	0	68.3-144		%Rec	1	12/20/2016 8:06:47 PM	29267
EPA METHOD 300.0: ANIONS							Analyst: **LGT**	
Chloride	530	12	30		mg/Kg	20	12/20/2016 4:26:44 PM	29304

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**
04-Jan-17

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID **MB-29304**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **29304**	RunNo: **39553**
Prep Date: **12/20/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238673** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Phosphorus, Orthophosphate (As P	ND	1.5								
Sulfate	ND	1.5								

Sample ID **LCS-29304**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **29304**	RunNo: **39553**
Prep Date: **12/20/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238674** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.6	0.30	1.500	0	104	90	110			
Chloride	14	1.5	15.00	0	95.1	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	95.3	90	110			
Bromide	7.3	0.30	7.500	0	97.3	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	99.2	90	110			
Phosphorus, Orthophosphate (As P	14	1.5	15.00	0	96.5	90	110			
Sulfate	29	1.5	30.00	0	96.8	90	110			

Sample ID **1612914-001BMS**	SampType: **MS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Cell #1 Vadose**	Batch ID: **29304**	RunNo: **39553**
Prep Date: **12/20/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238688** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.6	0.30	3.000	0	87.8	71.5	113			
Bromide	10	0.30	7.500	3.024	97.7	81.1	111			
Nitrogen, Nitrate (As N)	9.4	0.30	7.500	1.782	102	83.8	113			
Phosphorus, Orthophosphate (As P	2.3	1.5	15.00	0.2865	13.6	15	105			S

Sample ID **1612914-001BMSD**	SampType: **MSD**	TestCode: **EPA Method 300.0: Anions**
Client ID: **Cell #1 Vadose**	Batch ID: **29304**	RunNo: **39553**
Prep Date: **12/20/2016**	Analysis Date: **12/20/2016**	SeqNo: **1238689** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nitrogen, Nitrite (As N)	2.6	0.30	3.000	0	86.3	71.5	113	1.71	20	
Bromide	10	0.30	7.500	3.024	97.5	81.1	111	0.159	20	
Nitrogen, Nitrate (As N)	9.4	0.30	7.500	1.782	101	83.8	113	0.453	20	
Phosphorus, Orthophosphate (As P	2.2	1.5	15.00	0.2865	12.6	15	105	6.21	20	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**

04-Jan-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**LCS-29273**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**29273**		RunNo:	**39526**				
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**		SeqNo:	**1238583**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	89.5	63.8	116			
Surr: DNOP	4.7		5.000		94.4	70	130			

Sample ID	**MB-29273**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**29273**		RunNo:	**39526**				
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**		SeqNo:	**1238584**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		99.6	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**
04-Jan-17

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID	**MB-29267**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**29267**	RunNo:	**39531**					
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**	SeqNo:	**1238284**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	860		1000		86.3	68.3	144			

Sample ID	**LCS-29267**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**29267**	RunNo:	**39531**					
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**	SeqNo:	**1238285**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	74.6	123			
Surr: BFB	970		1000		97.0	68.3	144			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**
04-Jan-17

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID	**MB-29267**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**29267**	RunNo:	**39531**					
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**	SeqNo:	**1238317**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	0.10								
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.96		1.000		96.5	80	120			

Sample ID	**LCS-29267**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**29267**	RunNo:	**39531**					
Prep Date:	**12/19/2016**	Analysis Date:	**12/20/2016**	SeqNo:	**1238318**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	1.0	0.10	1.000	0	104	65.7	116			
Benzene	1.2	0.025	1.000	0	117	75.2	115			S
Toluene	1.0	0.050	1.000	0	103	80.7	112			
Ethylbenzene	1.0	0.050	1.000	0	100	78.9	117			
Xylenes, Total	3.0	0.10	3.000	0	100	79.2	115			
Surr: 4-Bromofluorobenzene	1.0		1.000		99.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**

04-Jan-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-29315**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**29315**	RunNo:	**39552**					
Prep Date:	**12/20/2016**	Analysis Date:	**12/21/2016**	SeqNo:	**1238660**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.0036	0.033								J

Sample ID	**LCS-29315**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**29315**	RunNo:	**39552**					
Prep Date:	**12/20/2016**	Analysis Date:	**12/21/2016**	SeqNo:	**1238661**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1612914**

04-Jan-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-29325**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**29325**	RunNo:	**39596**
Prep Date:	**12/21/2016**	Analysis Date:	**12/22/2016**	SeqNo:	**1240181** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID	**LCS-29325**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**29325**	RunNo:	**39596**
Prep Date:	**12/21/2016**	Analysis Date:	**12/22/2016**	SeqNo:	**1240182** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	24	2.5	25.00	0	98.0	80	120			
Barium	24	0.10	25.00	0	97.4	80	120			
Cadmium	25	0.10	25.00	0	98.4	80	120			
Calcium	2500	25	2500	0	101	80	120			
Chromium	24	0.30	25.00	0	97.1	80	120			
Copper	25	0.30	25.00	0	101	80	120			
Iron	25	2.5	25.00	0	101	80	120			
Lead	23	0.25	25.00	0	93.8	80	120			
Magnesium	2500	25	2500	0	99.2	80	120			
Manganese	24	0.10	25.00	0	97.1	80	120			
Potassium	2400	50	2500	0	97.2	80	120			
Selenium	23	2.5	25.00	0	92.9	80	120			
Silver	5.0	0.25	5.000	0	99.1	80	120			
Sodium	2400	25	2500	0	97.8	80	120			
Uranium	25	5.0	25.00	0	102	80	120			
Zinc	24	2.5	25.00	0	94.9	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1612914 RcptNo: 1

Received by/date: AG 12/15/16

Logged By: Anne Thorne 12/15/2016 8:10:00 AM Anne Thorne

Completed By: Anne Thorne 12/16/2016 1:29:58 PM Anne Thorne

Reviewed By: AJS 12/19/16

Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☑
2. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
3. How was the sample delivered? Courier

Log In

4. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☑ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
9. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
11. Were any sample containers received broken? Yes ☐ No ☑
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
14. Is it clear what analyses were requested? Yes ☑ No ☐
15. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.4	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Drive, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1612914	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	300.0 Chlorides	MCA	WQCC Metals		Air Bubbles (Y or N)
12/14/16	1410	Soil	Cell #1 Vadose	(2) 4oz Glass (1) 2 piece	Cold	001	X		X					X					X	X		
12/14/16	1400	Soil	Cell #2 North Vadose	1	1	002	X		X					X					X	X		
12/14/16	1350	Soil	Cell #2 South Vadose			003	X		X					X					X	X		
12/14/16	1450	Soil	Cell #1 Treatment	(2) 4oz Glass	Cold	004			X									X				
12/14/16	1437	Soil	Cell #2 South Treatment	1	1	005			X									X				
12/14/16	1445	Soil	Cell #2 North Treatment			006			X									X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/14/16	1715	Heather Woods		12/14/16	1715
12/14/16	1821			12/15/16	0810

Remarks: See attached sheet for analysis
Rates per Andy
Direct bill to Agua Moss
See attached PO

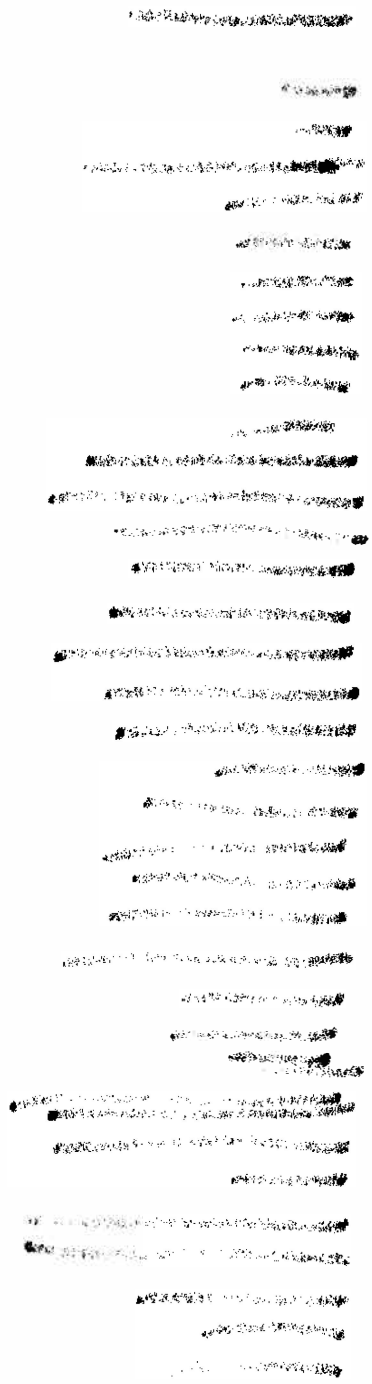
If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

J + MDL

Analyzed Background Soil Concentration

Parameter	Adjusted Facility Background	
Gasoline Range (C5-C10)	0.2	(mg/kg)
Diesel Range (C10-C28)	0.1	(mg/kg)
TPH (Method 8015B)	0.1	(mg/kg)
Benzene	0.01	(mg/kg)
Toluene	0.01	(mg/kg)
Ethylbenzene	0.01	(mg/kg)
p,m-Xylene	0.01	(mg/kg)
o-Xylene	0.01	(mg/kg)
Total BTEX	0.01	(mg/kg)
[redacted]	7.735	(s.u.)
[redacted]	422	(umhos/cm)
[redacted]	310	(mg/L)
[redacted]	0.95	
[redacted]	92.5	(mg/L)
[redacted]	122.5	(mg/L)
[redacted]	92.5	(mg/L)
[redacted]	0.01	(mg/L)
[redacted]	0.01	(mg/L)
Nitrate Nitrogen	22.3	(mg/L)
Nitrite Nitrogen	0.01	(mg/L)
Chloride	39.15	(mg/L)
Fluoride	1.0075	(mg/L)
Phosphate	1.7025	(mg/L)
Sulfate	140.8	(mg/L)
Iron	0.01	(mg/L)
Calcium	37.2	(mg/L)
Magnesium	7.21	(mg/L)
Potassium	8.29	(mg/L)
Sodium	25.1	(mg/L)
[redacted]	0.003	(mg/L)
Arsenic	3.905	(mg/kg)
Barium	274.5	(mg/kg)
Cadmium	0.575	(mg/kg)
Chromium	8.94	(mg/kg)
Copper	10.34	(mg/kg)
Lead	17.05	(mg/kg)
Mercury	0.315	(mg/kg)
Manganese	258	(mg/kg)



HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 20, 2017

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Sunco Landfarm OrderNo.: 1703795

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/15/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1703795**
Date Reported: **3/20/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1
Project: Sunco Landfarm
Collection Date: 3/14/2017 10:00:00 AM
Lab ID: 1703795-001 **Matrix:** SOIL **Received Date:** 3/15/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	3/18/2017 2:32:51 AM	30698
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/18/2017 2:32:51 AM	30698
Surr: DNOP	105	70-130		%Rec	1	3/18/2017 2:32:51 AM	30698
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/16/2017 9:37:55 PM	30712
Surr: BFB	63.4	54-150		%Rec	1	3/16/2017 9:37:55 PM	30712
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/16/2017 9:37:55 PM	30712
Toluene	ND	0.047		mg/Kg	1	3/16/2017 9:37:55 PM	30712
Ethylbenzene	ND	0.047		mg/Kg	1	3/16/2017 9:37:55 PM	30712
Xylenes, Total	ND	0.095		mg/Kg	1	3/16/2017 9:37:55 PM	30712
Surr: 4-Bromofluorobenzene	66.9	66.6-132		%Rec	1	3/16/2017 9:37:55 PM	30712

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1703795**
Date Reported: **3/20/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North
Project: Sunco Landfarm
Collection Date: 3/14/2017 9:35:00 AM
Lab ID: 1703795-002 **Matrix:** SOIL **Received Date:** 3/15/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/18/2017 2:54:36 AM	30698
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/18/2017 2:54:36 AM	30698
Surr: DNOP	84.6	70-130		%Rec	1	3/18/2017 2:54:36 AM	30698
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/16/2017 10:04:13 PM	30712
Surr: BFB	65.0	54-150		%Rec	1	3/16/2017 10:04:13 PM	30712
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	3/16/2017 10:04:13 PM	30712
Toluene	ND	0.046		mg/Kg	1	3/16/2017 10:04:13 PM	30712
Ethylbenzene	ND	0.046		mg/Kg	1	3/16/2017 10:04:13 PM	30712
Xylenes, Total	ND	0.092		mg/Kg	1	3/16/2017 10:04:13 PM	30712
Surr: 4-Bromofluorobenzene	70.1	66.6-132		%Rec	1	3/16/2017 10:04:13 PM	30712

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1703795**
Date Reported: **3/20/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South
Project: Sunco Landfarm
Collection Date: 3/14/2017 9:45:00 AM
Lab ID: 1703795-003 **Matrix:** SOIL **Received Date:** 3/15/2017 7:20:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	3/18/2017 3:16:26 AM	30698
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	3/18/2017 3:16:26 AM	30698
Surr: DNOP	99.7	70-130		%Rec	1	3/18/2017 3:16:26 AM	30698
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/16/2017 7:52:37 PM	30712
Surr: BFB	88.1	54-150		%Rec	1	3/16/2017 7:52:37 PM	30712
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	3/16/2017 7:52:37 PM	30712
Toluene	ND	0.047		mg/Kg	1	3/16/2017 7:52:37 PM	30712
Ethylbenzene	ND	0.047		mg/Kg	1	3/16/2017 7:52:37 PM	30712
Xylenes, Total	ND	0.093		mg/Kg	1	3/16/2017 7:52:37 PM	30712
Surr: 4-Bromofluorobenzene	125	66.6-132		%Rec	1	3/16/2017 7:52:37 PM	30712

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703795**

20-Mar-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**LCS-30698**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**30698**		RunNo:	**41403**				
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**		SeqNo:	**1299328**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.8	63.8	116			
Surr: DNOP	5.1		5.000		102	70	130			

Sample ID	**MB-30698**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**30698**		RunNo:	**41403**				
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**		SeqNo:	**1299329**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703795**

20-Mar-17

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID	**MB-30712**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**30712**	RunNo:	**41422**					
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**	SeqNo:	**1299218**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	730		1000		72.6	54	150			

Sample ID	**LCS-30712**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**30712**	RunNo:	**41422**					
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**	SeqNo:	**1299221**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	5.0	25.00	0	115	76.4	125			
Surr: BFB	810		1000		81.3	54	150			

Sample ID	**MB-30725**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**30725**	RunNo:	**41456**					
Prep Date:	**3/16/2017**	Analysis Date:	**3/17/2017**	SeqNo:	**1300833**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	690		1000		68.6	54	150			

Sample ID	**LCS-30725**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**30725**	RunNo:	**41456**					
Prep Date:	**3/16/2017**	Analysis Date:	**3/17/2017**	SeqNo:	**1300834**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	880		1000		88.2	54	150			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1703795**

20-Mar-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-30712**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**30712**	RunNo:	**41422**					
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**	SeqNo:	**1299243**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.79		1.000		79.2	66.6	132			

Sample ID	**LCS-30712**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**30712**	RunNo:	**41422**					
Prep Date:	**3/15/2017**	Analysis Date:	**3/16/2017**	SeqNo:	**1299244**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.2	80	120			
Toluene	0.99	0.050	1.000	0	98.6	80	120			
Ethylbenzene	1.0	0.050	1.000	0	100	80	120			
Xylenes, Total	3.1	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	0.85		1.000		84.5	66.6	132			

Sample ID	**MB-30725**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**30725**	RunNo:	**41456**					
Prep Date:	**3/16/2017**	Analysis Date:	**3/17/2017**	SeqNo:	**1300908**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.75		1.000		75.3	66.6	132			

Sample ID	**LCS-30725**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**30725**	RunNo:	**41456**					
Prep Date:	**3/16/2017**	Analysis Date:	**3/17/2017**	SeqNo:	**1300909**	Units:	**%Rec**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.74		1.000		74.3	66.6	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1703795 RcptNo: 1

Received by/date: AT 03/15/17

Logged By: **Lindsay Mangin** 3/15/2017 7:20:00 AM

Completed By: **Lindsay Mangin** 3/15/2017 12:41:54 PM

Reviewed By: AGA 03/15/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr., Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name: Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez / Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.4°

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1703795	BTEX + ~~MTBE~~ + ~~TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
3/14/17	1000	Soil	Cell #1	(3) 4oz Glass	—	-001	X		X													
3/14/17	0935	Soil	Cell #2 North	(3) 4oz Glass	—	-002	X		X													
3/14/17	0945	Soil	Cell #2 South	(3) 4oz Glass	—	-003	X		X													

Date	Time	Relinquished by:	Received by:	Date	Time
3/14/17	1605	Heath M. Woods	Chris Walls	3/14/17	1605
3/14/17	1911	Chris Walls		03/15/17	0720

Remarks: Direct bill to Agua Moss
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 21, 2017

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Sunco Landfarm OrderNo.: 1706635

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/13/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Sunco Landfarm
Collection Date: 6/12/2017 10:20:00 AM
Lab ID: 1706635-001 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	250	30		mg/Kg	20	6/20/2017 1:09:59 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	18	9.8		mg/Kg	1	6/15/2017 8:06:27 PM	32292
Motor Oil Range Organics (MRO)	75	49		mg/Kg	1	6/15/2017 8:06:27 PM	32292
Surr: DNOP	84.6	70-130		%Rec	1	6/15/2017 8:06:27 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/15/2017 8:54:47 PM	32257
Surr: BFB	95.7	54-150		%Rec	1	6/15/2017 8:54:47 PM	32257
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/14/2017 6:59:22 PM	32257
Toluene	ND	0.048		mg/Kg	1	6/14/2017 6:59:22 PM	32257
Ethylbenzene	ND	0.048		mg/Kg	1	6/14/2017 6:59:22 PM	32257
Xylenes, Total	ND	0.096		mg/Kg	1	6/14/2017 6:59:22 PM	32257
Surr: 4-Bromofluorobenzene	119	66.6-132		%Rec	1	6/14/2017 6:59:22 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Vadose
Project: Sunco Landfarm
Collection Date: 6/12/2017 10:12:00 AM
Lab ID: 1706635-002 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	300	30		mg/Kg	20	6/20/2017 1:47:13 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	6/15/2017 9:21:53 PM	32292
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	6/15/2017 9:21:53 PM	32292
Surr: DNOP	74.3	70-130		%Rec	1	6/15/2017 9:21:53 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/15/2017 9:18:47 PM	32257
Surr: BFB	97.7	54-150		%Rec	1	6/15/2017 9:18:47 PM	32257
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/14/2017 7:23:18 PM	32257
Toluene	ND	0.049		mg/Kg	1	6/14/2017 7:23:18 PM	32257
Ethylbenzene	ND	0.049		mg/Kg	1	6/14/2017 7:23:18 PM	32257
Xylenes, Total	ND	0.099		mg/Kg	1	6/14/2017 7:23:18 PM	32257
Surr: 4-Bromofluorobenzene	123	66.6-132		%Rec	1	6/14/2017 7:23:18 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Sunco Landfarm
Collection Date: 6/12/2017 10:02:00 AM
Lab ID: 1706635-003 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	57	30		mg/Kg	20	6/20/2017 1:59:37 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/15/2017 9:46:54 PM	32292
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/15/2017 9:46:54 PM	32292
Surr: DNOP	79.9	70-130		%Rec	1	6/15/2017 9:46:54 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/15/2017 9:42:43 PM	32257
Surr: BFB	97.1	54-150		%Rec	1	6/15/2017 9:42:43 PM	32257
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/14/2017 7:47:11 PM	32257
Toluene	ND	0.048		mg/Kg	1	6/14/2017 7:47:11 PM	32257
Ethylbenzene	ND	0.048		mg/Kg	1	6/14/2017 7:47:11 PM	32257
Xylenes, Total	ND	0.097		mg/Kg	1	6/14/2017 7:47:11 PM	32257
Surr: 4-Bromofluorobenzene	123	66.6-132		%Rec	1	6/14/2017 7:47:11 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment
Project: Sunco Landfarm
Collection Date: 6/12/2017 11:07:00 AM
Lab ID: 1706635-004 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	6/20/2017 2:12:02 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	91	9.9		mg/Kg	1	6/16/2017 3:07:33 PM	32292
Motor Oil Range Organics (MRO)	820	49		mg/Kg	1	6/16/2017 3:07:33 PM	32292
Surr: DNOP	102	70-130		%Rec	1	6/16/2017 3:07:33 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/15/2017 10:06:37 PM	32257
Surr: BFB	97.5	54-150		%Rec	1	6/15/2017 10:06:37 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Treatment
Project: Sunco Landfarm
Collection Date: 6/12/2017 10:59:00 AM
Lab ID: 1706635-005 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	250	30		mg/Kg	20	6/20/2017 2:49:16 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	310	93		mg/Kg	10	6/15/2017 10:36:51 PM	32292
Motor Oil Range Organics (MRO)	3000	470		mg/Kg	10	6/15/2017 10:36:51 PM	32292
Surr: DNOP	0	70-130	S	%Rec	10	6/15/2017 10:36:51 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/15/2017 10:30:36 PM	32257
Surr: BFB	97.7	54-150		%Rec	1	6/15/2017 10:30:36 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1706635**
Date Reported: **6/21/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Treatment
Project: Sunco Landfarm
Collection Date: 6/12/2017 10:53:00 AM
Lab ID: 1706635-006 **Matrix:** SOIL **Received Date:** 6/13/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	32	30		mg/Kg	20	6/20/2017 3:01:40 PM	32385
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	24	9.9		mg/Kg	1	6/16/2017 2:42:35 PM	32292
Motor Oil Range Organics (MRO)	230	50		mg/Kg	1	6/16/2017 2:42:35 PM	32292
Surr: DNOP	97.8	70-130		%Rec	1	6/16/2017 2:42:35 PM	32292
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/15/2017 10:54:40 PM	32257
Surr: BFB	95.4	54-150		%Rec	1	6/15/2017 10:54:40 PM	32257

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1706635**

21-Jun-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-32385**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**32385**	RunNo:	**43638**					
Prep Date:	**6/20/2017**	Analysis Date:	**6/20/2017**	SeqNo:	**1375850**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-32385**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**32385**	RunNo:	**43638**					
Prep Date:	**6/20/2017**	Analysis Date:	**6/20/2017**	SeqNo:	**1375851**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	94.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1706635**

21-Jun-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID **1706635-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose**	Batch ID: **32292**	RunNo: **43528**
Prep Date: **6/14/2017**	Analysis Date: **6/15/2017**	SeqNo: **1372087** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.71	17.67	62.5	55.8	122			
Surr: DNOP	4.1		5.071		80.2	70	130			

Sample ID **1706635-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose**	Batch ID: **32292**	RunNo: **43528**
Prep Date: **6/14/2017**	Analysis Date: **6/15/2017**	SeqNo: **1372088** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	82	9.3	46.73	17.67	137	55.8	122	49.5	20	RS
Surr: DNOP	4.5		4.673		96.0	70	130	0	0	

Sample ID **LCS-32292**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **32292**	RunNo: **43528**
Prep Date: **6/14/2017**	Analysis Date: **6/15/2017**	SeqNo: **1372096** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	87.3	73.2	114			
Surr: DNOP	4.1		5.000		81.4	70	130			

Sample ID **MB-32292**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **32292**	RunNo: **43528**
Prep Date: **6/14/2017**	Analysis Date: **6/15/2017**	SeqNo: **1372097** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.7		10.00		87.4	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1706635**

21-Jun-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-32257**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370009**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.9	54	150			

Sample ID	**LCS-32257**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370010**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	100	76.4	125			
Surr: BFB	1000		1000		103	54	150			

Sample ID	**1706635-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2N Vadose**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370011**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.8	24.06	0	103	77.8	128			
Surr: BFB	1000		962.5		108	54	150			

Sample ID	**1706635-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2N Vadose**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370012**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.6	23.11	0	102	77.8	128	4.44	20	
Surr: BFB	980		924.2		106	54	150	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1706635**

21-Jun-17

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID	**MB-32257**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370018**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		123	66.6	132			

Sample ID	**LCS-32257**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370019**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	106	80	120			
Xylenes, Total	3.2	0.10	3.000	0	108	80	120			
Surr: 4-Bromofluorobenzene	1.2		1.000		125	66.6	132			

Sample ID	**1706635-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Cell #1 Vadose**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370023**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.024	0.9756	0	119	61.5	138			
Toluene	1.2	0.049	0.9756	0	122	71.4	127			
Ethylbenzene	1.2	0.049	0.9756	0	124	70.9	132			
Xylenes, Total	3.7	0.098	2.927	0	126	76.2	123			S
Surr: 4-Bromofluorobenzene	1.2		0.9756		124	66.6	132			

Sample ID	**1706635-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Cell #1 Vadose**	Batch ID:	**32257**	RunNo:	**43490**					
Prep Date:	**6/13/2017**	Analysis Date:	**6/14/2017**	SeqNo:	**1370024**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9497	0	118	61.5	138	3.94	20	
Toluene	1.1	0.047	0.9497	0	121	71.4	127	3.72	20	
Ethylbenzene	1.2	0.047	0.9497	0	122	70.9	132	4.15	20	
Xylenes, Total	3.5	0.095	2.849	0	124	76.2	123	4.03	20	S
Surr: 4-Bromofluorobenzene	1.2		0.9497		123	66.6	132	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1706635 RcptNo: 1

Received By: Anne Thorne 6/13/2017 7:55:00 AM

Completed By: Richie Eriacho 6/13/2017 9:43:30 AM

Reviewed By: AJS 6/13/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? _____
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good				

Chain-of-Custody Record

Client: Rule Engineering LLC

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ■ Rush

Project Name: Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1706635	BTEX + ~~MTBE~~ + ~~TMB~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO_3, NO_2, PO_4, SO_4) 300.0 Chlorides	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
6/12/17	1020	Soil	Cell #1 Vadose	(1) 4 oz Glass	Non	-001	X		X					X								
6/12/17	1012	Soil	Cell #2N Vadose			-002	X		X					X								
6/12/17	1002	Soil	Cell #2S Vadose			-003	X		X					X								
6/12/17	1107	Soil	Cell #1 Treatment			-004			X					X								
6/12/17	1059	Soil	Cell #2N Treatment			-005			X					X								
6/12/17	1053	Soil	Cell #2S Treatment			-006			X					X								

NES

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/12/17	1730	Heather M. Woods	Mystie Wolfe	6/12/17	1730
6/12/17	1817	Mystie Wolfe		06/13/17	0755

Remarks: Direct Bill to Agua Moss. Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 11, 2017

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Landfarm OrderNo.: 1709150

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/2/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1709150**
Date Reported: **9/11/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Landfarm
Collection Date: 9/1/2017 9:40:00 AM
Lab ID: 1709150-001 **Matrix:** SOIL **Received Date:** 9/2/2017 12:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/7/2017 3:05:43 PM	33721
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	9/7/2017 3:05:43 PM	33721
Surr: DNOP	76.4	70-130		%Rec	1	9/7/2017 3:05:43 PM	33721
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/7/2017 3:24:08 PM	33725
Surr: BFB	89.7	54-150		%Rec	1	9/7/2017 3:24:08 PM	33725
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	9/7/2017 3:24:08 PM	33725
Toluene	ND	0.047		mg/Kg	1	9/7/2017 3:24:08 PM	33725
Ethylbenzene	ND	0.047		mg/Kg	1	9/7/2017 3:24:08 PM	33725
Xylenes, Total	ND	0.093		mg/Kg	1	9/7/2017 3:24:08 PM	33725
Surr: 4-Bromofluorobenzene	97.6	66.6-132		%Rec	1	9/7/2017 3:24:08 PM	33725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1709150**
Date Reported: **9/11/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose
Project: Agua Moss Landfarm
Collection Date: 9/1/2017 9:15:00 AM
Lab ID: 1709150-002 **Matrix:** SOIL **Received Date:** 9/2/2017 12:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	9/7/2017 3:27:55 PM	33721
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/7/2017 3:27:55 PM	33721
Surr: DNOP	84.5	70-130		%Rec	1	9/7/2017 3:27:55 PM	33721
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	9/7/2017 4:35:12 PM	33725
Surr: BFB	89.7	54-150		%Rec	1	9/7/2017 4:35:12 PM	33725
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	9/7/2017 4:35:12 PM	33725
Toluene	ND	0.048		mg/Kg	1	9/7/2017 4:35:12 PM	33725
Ethylbenzene	ND	0.048		mg/Kg	1	9/7/2017 4:35:12 PM	33725
Xylenes, Total	ND	0.096		mg/Kg	1	9/7/2017 4:35:12 PM	33725
Surr: 4-Bromofluorobenzene	97.4	66.6-132		%Rec	1	9/7/2017 4:35:12 PM	33725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1709150**
Date Reported: **9/11/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose
Project: Agua Moss Landfarm
Collection Date: 9/1/2017 9:30:00 AM
Lab ID: 1709150-003 **Matrix:** SOIL **Received Date:** 9/2/2017 12:50:00 PM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/7/2017 3:50:11 PM	33721
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	9/7/2017 3:50:11 PM	33721
Surr: DNOP	83.6	70-130		%Rec	1	9/7/2017 3:50:11 PM	33721
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/7/2017 5:45:59 PM	33725
Surr: BFB	89.0	54-150		%Rec	1	9/7/2017 5:45:59 PM	33725
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	9/7/2017 5:45:59 PM	33725
Toluene	ND	0.047		mg/Kg	1	9/7/2017 5:45:59 PM	33725
Ethylbenzene	ND	0.047		mg/Kg	1	9/7/2017 5:45:59 PM	33725
Xylenes, Total	ND	0.094		mg/Kg	1	9/7/2017 5:45:59 PM	33725
Surr: 4-Bromofluorobenzene	98.0	66.6-132		%Rec	1	9/7/2017 5:45:59 PM	33725

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709150**

11-Sep-17

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**LCS-33721**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**33721**		RunNo:	**45469**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1440795**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	10	50.00	0	88.0	73.2	114			
Surr: DNOP	4.8		5.000		96.9	70	130			

Sample ID	**MB-33721**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**33721**		RunNo:	**45469**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1440796**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709150**

11-Sep-17

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**LCS-33725**	SampType:	**LCS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**33725**		RunNo:	**45483**					
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442487**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	26	5.0	25.00	0	104	76.4	125				
Surr: BFB	1000		1000		99.6	54	150				

Sample ID	**MB-33725**	SampType:	**MBLK**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**33725**		RunNo:	**45483**					
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442488**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	ND	5.0									
Surr: BFB	900		1000		89.9	54	150				

Sample ID	**1709150-002AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North Vados**	Batch ID:	**33725**		RunNo:	**45483**					
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442500**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	29	4.8	24.06	0	122	77.8	128				
Surr: BFB	980		962.5		101	54	150				

Sample ID	**1709150-002AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North Vados**	Batch ID:	**33725**		RunNo:	**45483**					
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442501**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Gasoline Range Organics (GRO)	28	5.0	24.90	0	112	77.8	128	4.93	20		
Surr: BFB	1000		996.0		101	54	150	0	0		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709150**

11-Sep-17

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**1709150-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**Cell #1 Vadose**	Batch ID:	**33725**		RunNo:	**45483**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442492**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9699	0	91.3	80.9	132	3.17	20	
Toluene	0.94	0.048	0.9699	0	96.5	79.8	136	2.66	20	
Ethylbenzene	0.97	0.048	0.9699	0	99.8	79.4	140	1.19	20	
Xylenes, Total	2.9	0.097	2.910	0	99.7	78.5	142	2.54	20	
Surr: 4-Bromofluorobenzene	0.97		0.9699		100	66.6	132	0	0	

Sample ID	**LCS-33725**	SampType:	**LCS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**LCSS**	Batch ID:	**33725**		RunNo:	**45483**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442497**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	89.8	80	120			
Toluene	0.93	0.050	1.000	0	92.9	80	120			
Ethylbenzene	0.94	0.050	1.000	0	94.2	80	120			
Xylenes, Total	2.9	0.10	3.000	0	95.4	80	120			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.3	66.6	132			

Sample ID	**MB-33725**	SampType:	**MBLK**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**PBS**	Batch ID:	**33725**		RunNo:	**45483**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442498**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.6	66.6	132			

Sample ID	**1709150-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8021B: Volatiles**				
Client ID:	**Cell #1 Vadose**	Batch ID:	**33725**		RunNo:	**45483**				
Prep Date:	**9/6/2017**	Analysis Date:	**9/7/2017**		SeqNo:	**1442499**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.024	0.9588	0	95.3	80.9	132			
Toluene	0.96	0.048	0.9588	0	100	79.8	136			
Ethylbenzene	0.98	0.048	0.9588	0	102	79.4	140			
Xylenes, Total	3.0	0.096	2.876	0	103	78.5	142			
Surr: 4-Bromofluorobenzene	0.95		0.9588		98.8	66.6	132			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1709150 RcptNo: 1

Received By: Andy Freeman 9/2/2017 12:50:00 PM

Completed By: Ashley Gallegos 9/5/2017 4:47:33 PM

Reviewed By: IMD 09/06/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.6	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering LLC

Mailing Address: 501 Airport Drive, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Agua Moss Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez / Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.6 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1709150	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)					Air Bubbles (Y or N)
9/1/17	940	Soil	Cell #1 Vadose	(1) 4oz Glass	—	-001	X		X													
9/1/17	915	Soil	Cell #2 North Vadose	(1) 4oz Glass	—	-002	X		X													
9/1/17	930	Soil	Cell #2 South Vadose	(1) 4oz Glass	—	-003	X		X													

Date	Time	Relinquished by:	Received by:	Date	Time
9/1/17	1710	Heath M. Woods	Christ Walt	9/1/17	1710
9/1/17	1821	Christ Walt		9/2/17	1250

Remarks: Direct Bill to Agua Moss
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

January 05, 2018

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Sunco Landfarm OrderNo.: 1712526

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/8/2017 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:31:00 AM
Lab ID: 1712526-001 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	4.5	0.30		mg/Kg	1	12/27/2017 9:21:08 AM	35716
Chloride	410	30		mg/Kg	20	12/26/2017 7:02:40 PM	35716
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/26/2017 6:50:15 PM	35716
Nitrogen, Nitrate (As N)	19	0.30		mg/Kg	1	12/26/2017 6:50:15 PM	35716
Sulfate	680	30		mg/Kg	20	12/26/2017 7:02:40 PM	35716
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.033		mg/Kg	1	12/15/2017 4:25:24 PM	35509
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Aluminum	6700	1500		mg/Kg	500	12/26/2017 12:28:16 PM	35507
Arsenic	ND	2.4		mg/Kg	1	12/28/2017 9:54:47 AM	35507
Barium	480	4.9		mg/Kg	50	1/4/2018 10:27:50 AM	35507
Boron	6.1	2.0		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Cadmium	ND	0.098		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Calcium	120000	1200		mg/Kg	50	12/28/2017 10:31:50 AM	35507
Chromium	2.6	0.29		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Cobalt	1.4	0.29		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Copper	2.4	0.29		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Iron	4700	240		mg/Kg	100	1/4/2018 11:45:08 AM	35507
Lead	ND	0.24		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Magnesium	4800	24		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Manganese	63	0.49		mg/Kg	5	12/26/2017 12:31:52 PM	35507
Molybdenum	ND	0.39		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Nickel	3.0	0.49		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Potassium	630	49		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Selenium	8.9	2.4		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Silver	0.82	0.24		mg/Kg	1	12/28/2017 9:54:47 AM	35507
Sodium	560	24		mg/Kg	1	12/26/2017 10:36:25 AM	35507
Uranium	ND	4.9		mg/Kg	1	1/4/2018 12:53:39 PM	35507
Zinc	7.2	2.4		mg/Kg	1	12/26/2017 10:36:25 AM	35507
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/14/2017 12:25:13 PM	35467
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/14/2017 12:25:13 PM	35467
Surr: DNOP	97.8	70-130		%Rec	1	12/14/2017 12:25:13 PM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2017 12:34:02 PM	35455
Surr: BFB	89.7	15-316		%Rec	1	12/13/2017 12:34:02 PM	35455
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:31:00 AM
Lab ID: 1712526-001 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	12/13/2017 12:34:02 PM	35455
Toluene	ND	0.049		mg/Kg	1	12/13/2017 12:34:02 PM	35455
Ethylbenzene	ND	0.049		mg/Kg	1	12/13/2017 12:34:02 PM	35455
Xylenes, Total	ND	0.098		mg/Kg	1	12/13/2017 12:34:02 PM	35455
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	1	12/13/2017 12:34:02 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:10:00 AM
Lab ID: 1712526-002 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	5.1	0.30		mg/Kg	1	12/27/2017 9:33:33 AM	35716
Chloride	540	30		mg/Kg	20	12/26/2017 7:27:30 PM	35716
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/26/2017 7:15:05 PM	35716
Nitrogen, Nitrate (As N)	2.4	0.30		mg/Kg	1	12/26/2017 7:15:05 PM	35716
Sulfate	220	30		mg/Kg	20	12/26/2017 7:27:30 PM	35716
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.032		mg/Kg	1	12/15/2017 4:27:07 PM	35509
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Aluminum	13000	3000		mg/Kg	1E	12/26/2017 12:26:20 PM	35507
Arsenic	2.9	2.5		mg/Kg	1	12/28/2017 9:57:46 AM	35507
Barium	540	5.0		mg/Kg	50	1/4/2018 10:35:22 AM	35507
Boron	6.8	2.0		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Cadmium	ND	0.099		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Calcium	66000	1200		mg/Kg	50	12/28/2017 10:33:19 AM	35507
Chromium	5.0	0.30		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Cobalt	2.5	0.30		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Copper	5.0	0.30		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Iron	9500	1200		mg/Kg	500	1/4/2018 11:46:31 AM	35507
Lead	0.45	0.25		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Magnesium	4600	25		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Manganese	150	0.99		mg/Kg	10	12/26/2017 12:33:36 PM	35507
Molybdenum	ND	0.40		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Nickel	5.0	0.50		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Potassium	1200	50		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Selenium	5.0	2.5		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Silver	ND	0.25		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Sodium	460	25		mg/Kg	1	12/26/2017 10:38:20 AM	35507
Uranium	ND	5.0		mg/Kg	1	1/4/2018 12:54:57 PM	35507
Zinc	15	2.5		mg/Kg	1	12/26/2017 10:38:20 AM	35507
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/14/2017 12:49:05 PM	35467
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/14/2017 12:49:05 PM	35467
Surr: DNOP	85.7	70-130		%Rec	1	12/14/2017 12:49:05 PM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2017 1:45:05 PM	35455
Surr: BFB	91.0	15-316		%Rec	1	12/13/2017 1:45:05 PM	35455
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:10:00 AM
Lab ID: 1712526-002 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/13/2017 1:45:05 PM	35455
Toluene	ND	0.049		mg/Kg	1	12/13/2017 1:45:05 PM	35455
Ethylbenzene	ND	0.049		mg/Kg	1	12/13/2017 1:45:05 PM	35455
Xylenes, Total	ND	0.098		mg/Kg	1	12/13/2017 1:45:05 PM	35455
Surr: 4-Bromofluorobenzene	109	80-120		%Rec	1	12/13/2017 1:45:05 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:20:00 AM
Lab ID: 1712526-003 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CJS**	
Fluoride	1.0	0.30		mg/Kg	1	12/27/2017 9:45:57 AM	35716
Chloride	330	30		mg/Kg	20	12/26/2017 7:52:19 PM	35716
Nitrogen, Nitrite (As N)	ND	0.30		mg/Kg	1	12/26/2017 7:39:54 PM	35716
Nitrogen, Nitrate (As N)	0.53	0.30		mg/Kg	1	12/26/2017 7:39:54 PM	35716
Sulfate	110	1.5		mg/Kg	1	12/26/2017 7:39:54 PM	35716
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.032		mg/Kg	1	12/15/2017 4:28:52 PM	35509
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Aluminum	7200	1500		mg/Kg	500	12/26/2017 12:29:55 PM	35507
Arsenic	ND	2.5		mg/Kg	1	12/28/2017 10:00:45 AM	35507
Barium	490	0.99		mg/Kg	10	12/26/2017 12:35:19 PM	35507
Boron	2.4	2.0		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Cadmium	ND	0.099		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Calcium	9600	250		mg/Kg	10	12/26/2017 12:35:19 PM	35507
Chromium	2.6	0.30		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Cobalt	2.2	0.30		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Copper	3.3	0.30		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Iron	7200	1200		mg/Kg	500	1/4/2018 11:48:01 AM	35507
Lead	1.7	0.25		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Magnesium	2300	25		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Manganese	210	0.99		mg/Kg	10	12/26/2017 12:35:19 PM	35507
Molybdenum	ND	0.39		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Nickel	3.2	0.49		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Potassium	610	49		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Selenium	ND	2.5		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Silver	ND	0.25		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Sodium	210	25		mg/Kg	1	12/26/2017 10:40:16 AM	35507
Uranium	ND	4.9		mg/Kg	1	1/4/2018 12:56:16 PM	35507
Zinc	12	2.5		mg/Kg	1	12/26/2017 10:40:16 AM	35507
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	12/14/2017 1:13:05 PM	35467
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/14/2017 1:13:05 PM	35467
Surr: DNOP	100	70-130		%Rec	1	12/14/2017 1:13:05 PM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2017 2:56:37 PM	35455
Surr: BFB	94.0	15-316		%Rec	1	12/13/2017 2:56:37 PM	35455
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:20:00 AM
Lab ID: 1712526-003 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/13/2017 2:56:37 PM	35455
Toluene	ND	0.049		mg/Kg	1	12/13/2017 2:56:37 PM	35455
Ethylbenzene	ND	0.049		mg/Kg	1	12/13/2017 2:56:37 PM	35455
Xylenes, Total	ND	0.099		mg/Kg	1	12/13/2017 2:56:37 PM	35455
Surr: 4-Bromofluorobenzene	113	80-120		%Rec	1	12/13/2017 2:56:37 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment (12/7/17)
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 10:06:00 AM
Lab ID: 1712526-004 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	ND	30		mg/Kg	20	12/26/2017 8:04:43 PM	35716
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	370	98		mg/Kg	10	12/15/2017 10:24:55 AM	35467
Motor Oil Range Organics (MRO)	1800	490		mg/Kg	10	12/15/2017 10:24:55 AM	35467
Surr: DNOP	0	70-130	S	%Rec	10	12/15/2017 10:24:55 AM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/13/2017 6:31:02 PM	35455
Surr: BFB	81.1	15-316		%Rec	1	12/13/2017 6:31:02 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Treatment (12/7/1
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 10:00:00 AM
Lab ID: 1712526-005 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	440	30		mg/Kg	20	12/26/2017 8:41:57 PM	35716
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	550	97		mg/Kg	10	12/14/2017 2:01:28 PM	35467
Motor Oil Range Organics (MRO)	4900	490		mg/Kg	10	12/14/2017 2:01:28 PM	35467
Surr: DNOP	0	70-130	S	%Rec	10	12/14/2017 2:01:28 PM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	12/13/2017 6:54:32 PM	35455
Surr: BFB	84.6	15-316		%Rec	1	12/13/2017 6:54:32 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1712526**
Date Reported: **1/5/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Treatment (12/7/1
Project: Agua Moss Sunco Landfarm
Collection Date: 12/7/2017 9:55:00 AM
Lab ID: 1712526-006 **Matrix:** SOIL **Received Date:** 12/8/2017 7:55:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	550	30		mg/Kg	20	12/26/2017 8:54:22 PM	35716
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	200	93		mg/Kg	10	12/14/2017 3:14:38 PM	35467
Motor Oil Range Organics (MRO)	1600	460		mg/Kg	10	12/14/2017 3:14:38 PM	35467
Surr: DNOP	0	70-130	S	%Rec	10	12/14/2017 3:14:38 PM	35467
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	12/13/2017 7:18:00 PM	35455
Surr: BFB	81.2	15-316		%Rec	1	12/13/2017 7:18:00 PM	35455

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Report Date: 12/20/17

Lab ID: B17121122-001
Client Sample ID: 1712526-001B, Cell #1 Vadose 12/7/17
Collection Date: 12/07/17 09:31
DateReceived: 12/13/17
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	92	mg/kg		4		ASA10-3	12/19/17 15:18 / bas

Lab ID: B17121122-002
Client Sample ID: 1712526-002B, Cell #2 North Vadose 12/7/17
Collection Date: 12/07/17 09:10
DateReceived: 12/13/17
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	113	mg/kg		4		ASA10-3	12/19/17 15:27 / bas

Lab ID: B17121122-003
Client Sample ID: 1712526-003B, Cell #2 South Vadose 12/7/17
Collection Date: 12/07/17 09:20
DateReceived: 12/13/17
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	66	mg/kg		4		ASA10-3	12/19/17 15:31 / bas

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 12/20/17
Work Order: B17121122

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **ASA10-3**									Batch: 116795
Lab ID: **LCS-116795**	Laboratory Control Sample				Run: AR50_171219A				12/19/17 15:14
Alkalinity, 1:2	185	mg/kg	4.0	76	70	130			
Lab ID: **B17121122-001A DUP**	Sample Duplicate				Run: AR50_171219A				12/19/17 15:23
Alkalinity, 1:2	91.0	mg/kg	4.0				1.3	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35716**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**35716**	RunNo:	**48034**					
Prep Date:	**12/26/2017**	Analysis Date:	**12/26/2017**	SeqNo:	**1539476**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID	**LCS-35716**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**35716**	RunNo:	**48034**					
Prep Date:	**12/26/2017**	Analysis Date:	**12/26/2017**	SeqNo:	**1539477**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	96.3	90	110			
Nitrogen, Nitrite (As N)	3.1	0.30	3.000	0	103	90	110			
Nitrogen, Nitrate (As N)	7.7	0.30	7.500	0	103	90	110			
Sulfate	30	1.5	30.00	0	99.5	90	110			

Sample ID	**MB-35716**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**35716**	RunNo:	**48058**					
Prep Date:	**12/26/2017**	Analysis Date:	**12/27/2017**	SeqNo:	**1540366**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID	**LCS-35716**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**35716**	RunNo:	**48058**					
Prep Date:	**12/26/2017**	Analysis Date:	**12/27/2017**	SeqNo:	**1540367**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	99.5	90	110			
Chloride	14	1.5	15.00	0	90.8	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	97.3	90	110			
Nitrogen, Nitrate (As N)	7.3	0.30	7.500	0	98.0	90	110			
Sulfate	28	1.5	30.00	0	94.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**LCS-35467**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**35467**		RunNo:	**47739**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**		SeqNo:	**1526367**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	47	10	50.00	0	93.1	73.2	114				
Surr: DNOP	4.4		5.000		87.7	70	130				

Sample ID	**MB-35467**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**35467**		RunNo:	**47739**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**		SeqNo:	**1526368**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	ND	10									
Motor Oil Range Organics (MRO)	ND	50									
Surr: DNOP	8.3		10.00		83.4	70	130				

Sample ID	**1712526-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**Cell #1 Vadose (12/7**	Batch ID:	**35467**		RunNo:	**47770**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/14/2017**		SeqNo:	**1528641**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	49	10	50.92	0	96.8	55.8	125				
Surr: DNOP	4.7		5.092		92.6	70	130				

Sample ID	**1712526-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**Cell #1 Vadose (12/7**	Batch ID:	**35467**		RunNo:	**47770**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/14/2017**		SeqNo:	**1528642**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Diesel Range Organics (DRO)	46	10	50.61	0	91.6	55.8	125	6.14	20		
Surr: DNOP	4.4		5.061		87.7	70	130	0	0		

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35455**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**35455**	RunNo:	**47743**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526938**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		89.1	15	316			

Sample ID	**LCS-35455**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**35455**	RunNo:	**47743**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526939**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	110	75.9	131			
Surr: BFB	1000		1000		101	15	316			

Sample ID	**1712526-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North Vados**	Batch ID:	**35455**	RunNo:	**47743**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526942**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.7	23.65	0	121	77.8	128			
Surr: BFB	1000		946.1		106	15	316			

Sample ID	**1712526-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North Vados**	Batch ID:	**35455**	RunNo:	**47743**					
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526943**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	29	4.6	22.94	0	126	77.8	128	0.749	20	
Surr: BFB	970		917.4		105	15	316	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35455**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**PBS**	Batch ID:	**35455**	RunNo:	**47743**
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526967** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		107	80	120			

Sample ID	**LCS-35455**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**LCSS**	Batch ID:	**35455**	RunNo:	**47743**
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526968** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.1	77.3	128			
Toluene	0.95	0.050	1.000	0	95.4	79.2	125			
Ethylbenzene	0.94	0.050	1.000	0	94.3	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	95.9	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		114	80	120			

Sample ID	**1712526-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**Cell #1 Vadose (12/7**	Batch ID:	**35455**	RunNo:	**47743**
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526970** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.024	0.9542	0	99.5	80.9	132			
Toluene	0.98	0.048	0.9542	0.008806	102	79.8	136			
Ethylbenzene	0.99	0.048	0.9542	0	104	79.4	140			
Xylenes, Total	3.0	0.095	2.863	0	105	78.5	142			
Surr: 4-Bromofluorobenzene	1.1		0.9542		114	80	120			

Sample ID	**1712526-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**
Client ID:	**Cell #1 Vadose (12/7**	Batch ID:	**35455**	RunNo:	**47743**
Prep Date:	**12/12/2017**	Analysis Date:	**12/13/2017**	SeqNo:	**1526971** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.024	0.9766	0	103	80.9	132	5.35	20	
Toluene	1.0	0.049	0.9766	0.008806	106	79.8	136	5.95	20	
Ethylbenzene	1.1	0.049	0.9766	0	109	79.4	140	7.06	20	
Xylenes, Total	3.2	0.098	2.930	0	110	78.5	142	6.46	20	
Surr: 4-Bromofluorobenzene	1.1		0.9766		111	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35509**	SampType:	**MBLK**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**PBS**	Batch ID:	**35509**	RunNo:	**47830**					
Prep Date:	**12/14/2017**	Analysis Date:	**12/15/2017**	SeqNo:	**1529946**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID	**LCS-35509**	SampType:	**LCS**	TestCode:	**EPA Method 7471: Mercury**					
Client ID:	**LCSS**	Batch ID:	**35509**	RunNo:	**47830**					
Prep Date:	**12/14/2017**	Analysis Date:	**12/15/2017**	SeqNo:	**1529947**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1667	0	106	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35507**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**35507**	RunNo:	**47909**
Prep Date:	**12/14/2017**	Analysis Date:	**12/20/2017**	SeqNo:	**1535090** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID	**LCS-35507**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**35507**	RunNo:	**47909**
Prep Date:	**12/14/2017**	Analysis Date:	**12/20/2017**	SeqNo:	**1535091** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	100	80	120			
Barium	25	0.10	25.00	0	101	80	120			
Cadmium	26	0.10	25.00	0	102	80	120			
Calcium	2500	25	2500	0	100	80	120			
Chromium	24	0.30	25.00	0	98.0	80	120			
Copper	25	0.30	25.00	0	100	80	120			
Iron	25	2.5	25.00	0	101	80	120			
Lead	25	0.25	25.00	0	98.7	80	120			
Magnesium	2400	25	2500	0	95.3	80	120			
Manganese	25	0.10	25.00	0	102	80	120			
Potassium	2400	50	2500	0	94.8	80	120			
Selenium	25	2.5	25.00	0	101	80	120			
Silver	5.2	0.25	5.000	0	105	80	120			
Sodium	2400	25	2500	0	97.9	80	120			
Uranium	23	5.0	25.00	0	92.9	80	120			
Zinc	25	2.5	25.00	0	99.2	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**
05-Jan-18

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID	**MB-35507**	SampType:	**MBLK**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**PBS**	Batch ID:	**35507**	RunNo:	**47954**
Prep Date:	**12/14/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536337** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Magnesium	ND	25								
Manganese	ND	0.10								
Molybdenum	ND	0.40								
Nickel	ND	0.50								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID	**LCS-35507**	SampType:	**LCS**	TestCode:	**EPA Method 6010B: Soil Metals**
Client ID:	**LCSS**	Batch ID:	**35507**	RunNo:	**47954**
Prep Date:	**12/14/2017**	Analysis Date:	**12/21/2017**	SeqNo:	**1536338** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	26	0.10	25.00	0	104	80	120			
Cadmium	26	0.10	25.00	0	103	80	120			
Calcium	2400	25	2500	0	94.2	80	120			
Chromium	24	0.30	25.00	0	96.0	80	120			
Copper	25	0.30	25.00	0	102	80	120			
Iron	25	2.5	25.00	0	99.4	80	120			
Lead	25	0.25	25.00	0	98.9	80	120			
Magnesium	2400	25	2500	0	96.8	80	120			
Manganese	25	0.10	25.00	0	98.3	80	120			
Molybdenum	25	0.40	25.00	0	100	80	120			
Nickel	23	0.50	25.00	0	94.0	80	120			
Potassium	2400	50	2500	0	95.7	80	120			
Selenium	26	2.5	25.00	0	102	80	120			
Silver	5.4	0.25	5.000	0	108	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1712526**

05-Jan-18

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**LCS-35507**	SampType:	**LCS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**LCSS**	Batch ID:	**35507**		RunNo:	**47954**				
Prep Date:	**12/14/2017**	Analysis Date:	**12/21/2017**		SeqNo:	**1536338**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Sodium	2400	25	2500	0	97.4	80	120			
Uranium	23	5.0	25.00	0	93.0	80	120			
Zinc	23	2.5	25.00	0	93.7	80	120			

Sample ID	**MB-35507**	SampType:	**MBLK**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**PBS**	Batch ID:	**35507**		RunNo:	**48005**				
Prep Date:	**12/14/2017**	Analysis Date:	**12/26/2017**		SeqNo:	**1538216**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	3.0								
Boron	ND	2.0								
Cobalt	ND	0.30								

Sample ID	**LCS-35507**	SampType:	**LCS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**LCSS**	Batch ID:	**35507**		RunNo:	**48005**				
Prep Date:	**12/14/2017**	Analysis Date:	**12/26/2017**		SeqNo:	**1538217**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	27	3.0	25.00	0	107	80	120			
Boron	27	2.0	25.00	0	106	80	120			
Cobalt	23	0.30	25.00	0	92.5	80	120			

Sample ID	**MB-35507**	SampType:	**MBLK**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**PBS**	Batch ID:	**35507**		RunNo:	**48178**				
Prep Date:	**12/14/2017**	Analysis Date:	**1/4/2018**		SeqNo:	**1547051**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	ND	5.0								

Sample ID	**LCS-35507**	SampType:	**LCS**		TestCode:	**EPA Method 6010B: Soil Metals**				
Client ID:	**LCSS**	Batch ID:	**35507**		RunNo:	**48178**				
Prep Date:	**12/14/2017**	Analysis Date:	**1/4/2018**		SeqNo:	**1547052**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Uranium	24	5.0	25.00	0	96.6	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1712526** RcptNo: **1**

Received By: **Anne Thorne** **12/8/2017 7:55:00 AM**

Completed By: **Sophia Campuzano** **12/8/2017 2:31:32 PM**

Reviewed By: JMD 12/08/17

Chain of Custody

1. Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
2. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
3. How was the sample delivered?	Courier		

Log In

4. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
6. Sample(s) in proper container(s)?	Yes ☑	No ☐	
7. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
8. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
9. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
10. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
11. Were any sample containers received broken?	Yes ☐	No ☑	
12. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
13. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
14. Is it clear what analyses were requested?	Yes ☑	No ☐	
15. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Not Present			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name:
Agua Moss
Sunco Landfarm

Project #:

Project Manager:
Heather Woods

Sampler: Heather Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

12/19/17

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1712526	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F^-, Cl^-, NO_3, NO_2, PO_4, SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Metals	* Major Cations and Anions			Air Bubbles (Y or N)
12/7/17	0931	Soil	Cell #1 Vadose (12/7/17)	(2) 4oz Glass	Non	-001	X		X									X	X			
12/7/17	0910	Soil	Cell #2 - North Vadose (12/7/17)	(2) 4oz Glass	Non	-002	X		X									X	X			
12/7/17	0920	Soil	Cell #2 - South Vadose (12/7/17)	(2) 4oz Glass	Non	-003	X		X									X	X			
12/7/17	1006	Soil	Cell #1 Treatment (12/7/17)	(2) 4oz Glass	Non	-004	X		X					X								
12/7/17	1000	Soil	Cell #2 North Treatment (12/7/17)	(2) 4oz Glass	Non	-005	X		X					X								
12/7/17	0955	Soil	Cell #2 South Treatment (12/7/17)	(2) 4oz Glass	Non	-006	X		X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
12/7/17	1930	Heather M. Woods		12/7/17	1930
12/8/17	0755			12/8/17	0755

Remarks: Direct Bill to Agua Moss - Rates per Andy

* Chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium, and sodium Hold added to -004, 005, 006

per HW no BTEX on 004, 005, 006 AT 12/19/17

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

March 22, 2018

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Landfarm OrderNo.: 1803331

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 3/7/2018 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued March 13, 2018.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1803331**
Date Reported: **3/22/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South
Project: Agua Moss Landfarm
Collection Date: 3/6/2018 9:05:00 AM
Lab ID: 1803331-001 **Matrix:** SOIL **Received Date:** 3/7/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/9/2018 1:42:17 PM	36911
Motor Oil Range Organics (MRO)	77	48		mg/Kg	1	3/9/2018 1:42:17 PM	36911
Surr: DNOP	82.0	70-130		%Rec	1	3/9/2018 1:42:17 PM	36911
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	3/8/2018 9:44:52 AM	36891
Surr: BFB	99.1	15-316		%Rec	1	3/8/2018 9:44:52 AM	36891
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/8/2018 9:44:52 AM	36891
Toluene	ND	0.047		mg/Kg	1	3/8/2018 9:44:52 AM	36891
Ethylbenzene	ND	0.047		mg/Kg	1	3/8/2018 9:44:52 AM	36891
Xylenes, Total	ND	0.094		mg/Kg	1	3/8/2018 9:44:52 AM	36891
Surr: 4-Bromofluorobenzene	97.1	80-120		%Rec	1	3/8/2018 9:44:52 AM	36891

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1803331**
Date Reported: **3/22/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North
Project: Agua Moss Landfarm
Collection Date: 3/6/2018 9:10:00 AM
Lab ID: 1803331-002 **Matrix:** SOIL **Received Date:** 3/7/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/9/2018 3:04:40 PM	36911
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/9/2018 3:04:40 PM	36911
Surr: DNOP	78.0	70-130		%Rec	1	3/9/2018 3:04:40 PM	36911
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/8/2018 10:55:30 AM	36891
Surr: BFB	97.0	15-316		%Rec	1	3/8/2018 10:55:30 AM	36891
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	3/8/2018 10:55:30 AM	36891
Toluene	ND	0.046		mg/Kg	1	3/8/2018 10:55:30 AM	36891
Ethylbenzene	ND	0.046		mg/Kg	1	3/8/2018 10:55:30 AM	36891
Xylenes, Total	ND	0.093		mg/Kg	1	3/8/2018 10:55:30 AM	36891
Surr: 4-Bromofluorobenzene	95.2	80-120		%Rec	1	3/8/2018 10:55:30 AM	36891

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1803331**
Date Reported: **3/22/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1
Project: Agua Moss Landfarm
Collection Date: 3/6/2018 9:15:00 AM
Lab ID: 1803331-003 **Matrix:** SOIL **Received Date:** 3/7/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	3/9/2018 3:32:31 PM	36911
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/9/2018 3:32:31 PM	36911
Surr: DNOP	91.0	70-130		%Rec	1	3/9/2018 3:32:31 PM	36911
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/8/2018 12:05:46 PM	36891
Surr: BFB	95.2	15-316		%Rec	1	3/8/2018 12:05:46 PM	36891
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	3/8/2018 12:05:46 PM	36891
Toluene	ND	0.048		mg/Kg	1	3/8/2018 12:05:46 PM	36891
Ethylbenzene	ND	0.048		mg/Kg	1	3/8/2018 12:05:46 PM	36891
Xylenes, Total	ND	0.096		mg/Kg	1	3/8/2018 12:05:46 PM	36891
Surr: 4-Bromofluorobenzene	91.9	80-120		%Rec	1	3/8/2018 12:05:46 PM	36891

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803331**

22-Mar-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**LCS-36911**	SampType:	**LCS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**LCSS**	Batch ID:	**36911**		RunNo:	**49665**				
Prep Date:	**3/8/2018**	Analysis Date:	**3/9/2018**		SeqNo:	**1606616**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	10	50.00	0	94.8	70	130			
Surr: DNOP	4.0		5.000		80.3	70	130			

Sample ID	**MB-36911**	SampType:	**MBLK**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**PBS**	Batch ID:	**36911**		RunNo:	**49665**				
Prep Date:	**3/8/2018**	Analysis Date:	**3/9/2018**		SeqNo:	**1606617**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		88.7	70	130			

Sample ID	**1803331-001AMS**	SampType:	**MS**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**Cell #2 South**	Batch ID:	**36911**		RunNo:	**49664**				
Prep Date:	**3/8/2018**	Analysis Date:	**3/9/2018**		SeqNo:	**1606618**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	9.8	49.16	7.939	92.9	55.8	125			
Surr: DNOP	4.4		4.916		88.5	70	130			

Sample ID	**1803331-001AMSD**	SampType:	**MSD**		TestCode:	**EPA Method 8015M/D: Diesel Range Organics**				
Client ID:	**Cell #2 South**	Batch ID:	**36911**		RunNo:	**49664**				
Prep Date:	**3/8/2018**	Analysis Date:	**3/9/2018**		SeqNo:	**1606619**	Units:	**mg/Kg**		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	60	9.5	47.48	7.939	109	55.8	125	11.1	20	
Surr: DNOP	4.9		4.748		104	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803331**

22-Mar-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**MB-36891**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**36891**	RunNo:	**49653**					
Prep Date:	**3/7/2018**	Analysis Date:	**3/8/2018**	SeqNo:	**1605661**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		96.5	15	316			

Sample ID	**LCS-36891**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**36891**	RunNo:	**49653**					
Prep Date:	**3/7/2018**	Analysis Date:	**3/8/2018**	SeqNo:	**1605662**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	5.0	25.00	0	111	75.9	131			
Surr: BFB	1100		1000		113	15	316			

Sample ID	**1803331-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North**	Batch ID:	**36891**	RunNo:	**49653**					
Prep Date:	**3/7/2018**	Analysis Date:	**3/8/2018**	SeqNo:	**1605665**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.6	22.94	0	119	77.8	128			
Surr: BFB	990		917.4		107	15	316			

Sample ID	**1803331-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #2 North**	Batch ID:	**36891**	RunNo:	**49653**					
Prep Date:	**3/7/2018**	Analysis Date:	**3/8/2018**	SeqNo:	**1605666**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.8	23.81	0	113	77.8	128	1.24	20	
Surr: BFB	1000		952.4		108	15	316	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803331**

22-Mar-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID **MB-36891**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **36891**	RunNo: **49653**
Prep Date: **3/7/2018**	Analysis Date: **3/8/2018**	SeqNo: **1605685** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.6	80	120			

Sample ID **LCS-36891**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **36891**	RunNo: **49653**
Prep Date: **3/7/2018**	Analysis Date: **3/8/2018**	SeqNo: **1605686** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	104	77.3	128			
Toluene	1.0	0.050	1.000	0	103	79.2	125			
Ethylbenzene	1.0	0.050	1.000	0	101	80.7	127			
Xylenes, Total	3.1	0.10	3.000	0	104	81.6	129			
Surr: 4-Bromofluorobenzene	0.99		1.000		99.3	80	120			

Sample ID **1803331-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell #2 South**	Batch ID: **36891**	RunNo: **49653**
Prep Date: **3/7/2018**	Analysis Date: **3/8/2018**	SeqNo: **1605688** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9891	0	106	80.9	132			
Toluene	1.0	0.049	0.9891	0	106	79.8	136			
Ethylbenzene	1.0	0.049	0.9891	0	105	79.4	140			
Xylenes, Total	3.2	0.099	2.967	0	107	78.5	142			
Surr: 4-Bromofluorobenzene	0.94		0.9891		94.6	80	120			

Sample ID **1803331-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell #2 South**	Batch ID: **36891**	RunNo: **49653**
Prep Date: **3/7/2018**	Analysis Date: **3/8/2018**	SeqNo: **1605689** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9551	0	113	80.9	132	3.40	20	
Toluene	1.1	0.048	0.9551	0	112	79.8	136	2.07	20	
Ethylbenzene	1.1	0.048	0.9551	0	112	79.4	140	2.72	20	
Xylenes, Total	3.3	0.096	2.865	0	114	78.5	142	2.46	20	
Surr: 4-Bromofluorobenzene	0.94		0.9551		98.2	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1803331 RcptNo: 1

Received By: Anne Thorne 3/7/2018 7:00:00 AM
Completed By: Isaiah Ortiz 3/7/2018 8:27:53 AM
Reviewed By: ENM 3/7/18 Checked By DDS

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	# of preserved bottles checked for pH: ____ (<2 or >12 unless noted)
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	Adjusted? ____
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	Checked by: ____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified: ____ Date: ____
By Whom: ____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding: ____
Client Instructions: ____

16. Additional remarks:

17. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.4	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Drive Suite 205 Farmington, NM 87401

Phone #: 505 793 9486

email or Fax#: jvalder@ruleengineering.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Aqua Moss Merrion Land Farm

Project #: mg 03/22/18 per H.W.

Project Manager: Heather Woods

Sampler: Justin Valder

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.4-(F-1.0=2.4

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID (mg 03/22/18)	Container Type and #	Preservative Type	HEAL No. 1803331	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO_3,NO_2,PO_4,SO_4)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
3/6/18	905	Soil	Cell South #2 South	(1) 4oz Glass	Cold	001	X		X									
↓	910	↓	Cell North #2 North	↓	↓	002	X		X									
↓	915	↓	Cell #1	↓	↓	003	X		X									

Date	Time	Relinquished by:	Received by:	Date	Time
3/6/18	1730	Justin Valder		3/6/18	1730
3/6/18	1811				

Remarks: Direct Bill to Merrion

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 27, 2018

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Landfarm OrderNo.: 1806630

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/12/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-001 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	310	30		mg/Kg	20	6/25/2018 3:57:41 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/14/2018 9:24:05 PM	38667
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	6/14/2018 9:24:05 PM	38667
Surr: DNOP	110	70-130		%Rec	1	6/14/2018 9:24:05 PM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/13/2018 11:00:02 PM	38635
Surr: BFB	84.7	15-316		%Rec	1	6/13/2018 11:00:02 PM	38635
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	6/13/2018 11:00:02 PM	38635
Toluene	ND	0.049		mg/Kg	1	6/13/2018 11:00:02 PM	38635
Ethylbenzene	ND	0.049		mg/Kg	1	6/13/2018 11:00:02 PM	38635
Xylenes, Total	ND	0.098		mg/Kg	1	6/13/2018 11:00:02 PM	38635
Surr: 4-Bromofluorobenzene	98.1	80-120		%Rec	1	6/13/2018 11:00:02 PM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Vadose
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-002 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	580	30		mg/Kg	20	6/25/2018 4:10:06 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**TOM**
Diesel Range Organics (DRO)	70	9.9		mg/Kg	1	6/16/2018 3:26:07 AM	38667
Motor Oil Range Organics (MRO)	370	50		mg/Kg	1	6/16/2018 3:26:07 AM	38667
Surr: DNOP	116	70-130		%Rec	1	6/16/2018 3:26:07 AM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	6/13/2018 11:23:22 PM	38635
Surr: BFB	84.6	15-316		%Rec	1	6/13/2018 11:23:22 PM	38635
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	6/13/2018 11:23:22 PM	38635
Toluene	ND	0.046		mg/Kg	1	6/13/2018 11:23:22 PM	38635
Ethylbenzene	ND	0.046		mg/Kg	1	6/13/2018 11:23:22 PM	38635
Xylenes, Total	ND	0.092		mg/Kg	1	6/13/2018 11:23:22 PM	38635
Surr: 4-Bromofluorobenzene	97.8	80-120		%Rec	1	6/13/2018 11:23:22 PM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-003 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	63	30		mg/Kg	20	6/25/2018 4:22:31 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/14/2018 11:01:17 PM	38667
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/14/2018 11:01:17 PM	38667
Surr: DNOP	113	70-130		%Rec	1	6/14/2018 11:01:17 PM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/14/2018 12:56:33 AM	38635
Surr: BFB	88.1	15-316		%Rec	1	6/14/2018 12:56:33 AM	38635
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	6/14/2018 12:56:33 AM	38635
Toluene	ND	0.048		mg/Kg	1	6/14/2018 12:56:33 AM	38635
Ethylbenzene	ND	0.048		mg/Kg	1	6/14/2018 12:56:33 AM	38635
Xylenes, Total	ND	0.097		mg/Kg	1	6/14/2018 12:56:33 AM	38635
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	6/14/2018 12:56:33 AM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-004 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	56	30		mg/Kg	20	6/25/2018 4:34:56 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	14	9.8		mg/Kg	1	6/16/2018 4:14:30 AM	38667
Motor Oil Range Organics (MRO)	79	49		mg/Kg	1	6/16/2018 4:14:30 AM	38667
Surr: DNOP	125	70-130		%Rec	1	6/16/2018 4:14:30 AM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/14/2018 1:19:46 AM	38635
Surr: BFB	81.2	15-316		%Rec	1	6/14/2018 1:19:46 AM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Treatment
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-005 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	460	30		mg/Kg	20	6/25/2018 5:12:10 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	110	99		mg/Kg	10	6/14/2018 11:49:53 PM	38667
Motor Oil Range Organics (MRO)	680	500		mg/Kg	10	6/14/2018 11:49:53 PM	38667
Surr: DNOP	0	70-130	S	%Rec	10	6/14/2018 11:49:53 PM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	6/14/2018 1:43:01 AM	38635
Surr: BFB	80.1	15-316		%Rec	1	6/14/2018 1:43:01 AM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1806630**
Date Reported: **6/27/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Treatment
Project: Agua Moss Landfarm
Collection Date: 6/11/2018
Lab ID: 1806630-006 **Matrix:** SOIL **Received Date:** 6/12/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Chloride	400	30		mg/Kg	20	6/25/2018 5:24:35 PM	38870
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	17	10		mg/Kg	1	6/15/2018 12:14:02 AM	38667
Motor Oil Range Organics (MRO)	130	50		mg/Kg	1	6/15/2018 12:14:02 AM	38667
Surr: DNOP	111	70-130		%Rec	1	6/15/2018 12:14:02 AM	38667
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/14/2018 2:06:17 AM	38635
Surr: BFB	87.9	15-316		%Rec	1	6/14/2018 2:06:17 AM	38635

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806630**

27-Jun-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**MB-38870**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**38870**	RunNo:	**52211**					
Prep Date:	**6/25/2018**	Analysis Date:	**6/25/2018**	SeqNo:	**1711195**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-38870**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**38870**	RunNo:	**52211**					
Prep Date:	**6/25/2018**	Analysis Date:	**6/25/2018**	SeqNo:	**1711196**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	15	1.5	15.00	0	96.8	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806630**

27-Jun-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID **1806630-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose**	Batch ID: **38667**	RunNo: **51922**
Prep Date: **6/13/2018**	Analysis Date: **6/14/2018**	SeqNo: **1700081** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	9.9	49.46	2.720	94.9	62	120			
Surr: DNOP	5.2		4.946		106	70	130			

Sample ID **1806630-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose**	Batch ID: **38667**	RunNo: **51922**
Prep Date: **6/13/2018**	Analysis Date: **6/14/2018**	SeqNo: **1700082** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	58	10	50.00	2.720	110	62	120	15.1	20	
Surr: DNOP	6.4		5.000		128	70	130	0	0	

Sample ID **LCS-38667**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **38667**	RunNo: **51922**
Prep Date: **6/13/2018**	Analysis Date: **6/14/2018**	SeqNo: **1700099** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.2	70	130			
Surr: DNOP	4.9		5.000		97.7	70	130			

Sample ID **MB-38667**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **38667**	RunNo: **51922**
Prep Date: **6/13/2018**	Analysis Date: **6/14/2018**	SeqNo: **1700100** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		108	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1806630**

27-Jun-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**MB-38635**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**38635**	RunNo:	**51956**					
Prep Date:	**6/12/2018**	Analysis Date:	**6/13/2018**	SeqNo:	**1698126**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	890		1000		88.8	15	316			

Sample ID	**LCS-38635**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**38635**	RunNo:	**51956**					
Prep Date:	**6/12/2018**	Analysis Date:	**6/13/2018**	SeqNo:	**1698127**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	110	75.9	131			
Surr: BFB	980		1000		97.6	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1806630**
27-Jun-18

Client: Rule Engineering LLC
Project: Agua Moss Landfarm

Sample ID	**MB-38635**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**38635**	RunNo:	**51956**					
Prep Date:	**6/12/2018**	Analysis Date:	**6/13/2018**	SeqNo:	**1698170**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID	**LCS-38635**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**38635**	RunNo:	**51956**					
Prep Date:	**6/12/2018**	Analysis Date:	**6/13/2018**	SeqNo:	**1698171**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.0	77.3	128			
Toluene	0.98	0.050	1.000	0	98.0	79.2	125			
Ethylbenzene	0.97	0.050	1.000	0	97.5	80.7	127			
Xylenes, Total	3.0	0.10	3.000	0	99.8	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1806630 RcptNo: 1

Received By: **Anne Thorne** 6/12/2018 6:50:00 AM

Completed By: **Isaiah Ortiz** 6/12/2018 8:59:09 AM

Reviewed By: 06/12/18

LJB 06/12/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 06/12/18 (<2 or >12 unless noted)

Adjusted?

Checked by: JB

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.1	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr, Ste 205

Farmington, NM 87417

Phone #: (505) 325-1055

email or Fax#: jvaldez@ruleengineering.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance

☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:

☒ Standard ☐ Rush

Project Name: Agua Moss Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: ☒ Yes ☐ No

# of Coolers:

Cooler Temp (including CF): 2.1+0.1=2.2

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1806636	BTEX / ~~MTBE / TMB's~~ (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4 ~~Cl per 300.0~~	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/11/18		Soil	Cell #1 Vadose	(1) 4oz Glass	cold	-001	X	X					X			
6/11/18		Soil	Cell #2N Vadose	(1) 4oz Glass	cold	-002	X	X					X			
6/11/18		Soil	Cell #2S Vadose	(1) 4oz Glass	cold	-003	X	X					X			
6/11/18		Soil	Cell #1 Treatment	(1) 4oz Glass	cold	-004		X					X			
6/11/18		Soil	Cell #2N Treatment	(1) 4oz Glass	cold	-005		X					X			
6/11/18		Soil	Cell #2S Treatment	(1) 4oz Glass	cold	-006		X					X			

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
6/11/18	1433				6/11/18	1433
6/11/18	1840				06/12/18	0650

Remarks:
Direct Bill to Agua Moss
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 31, 2018

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Landfarm OrderNo.: 1808B01

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/16/2018 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1808B01**
Date Reported: **8/31/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Landfarm
Collection Date: 8/15/2018 9:57:00 AM
Lab ID: 1808B01-001 **Matrix:** SOIL **Received Date:** 8/16/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	610	30		mg/Kg	20	8/27/2018 3:03:42 PM	40002
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/21/2018 4:50:47 PM	39889
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/21/2018 4:50:47 PM	39889
Surr: DNOP	90.2	50.6-138		%Rec	1	8/21/2018 4:50:47 PM	39889
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/20/2018 7:23:23 PM	39861
Surr: BFB	88.8	15-316		%Rec	1	8/20/2018 7:23:23 PM	39861
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	8/20/2018 7:23:23 PM	39861
Toluene	ND	0.047		mg/Kg	1	8/20/2018 7:23:23 PM	39861
Ethylbenzene	ND	0.047		mg/Kg	1	8/20/2018 7:23:23 PM	39861
Xylenes, Total	ND	0.094		mg/Kg	1	8/20/2018 7:23:23 PM	39861
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	8/20/2018 7:23:23 PM	39861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **1808B01**
Date Reported: **8/31/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Vadose
Project: Agua Moss Landfarm
Collection Date: 8/15/2018 9:37:00 AM
Lab ID: 1808B01-002 **Matrix:** SOIL **Received Date:** 8/16/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	310	30		mg/Kg	20	8/27/2018 3:40:55 PM	40002
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/21/2018 5:12:44 PM	39889
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/21/2018 5:12:44 PM	39889
Surr: DNOP	126	50.6-138		%Rec	1	8/21/2018 5:12:44 PM	39889
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/20/2018 7:46:35 PM	39861
Surr: BFB	88.3	15-316		%Rec	1	8/20/2018 7:46:35 PM	39861
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.023		mg/Kg	1	8/20/2018 7:46:35 PM	39861
Toluene	ND	0.047		mg/Kg	1	8/20/2018 7:46:35 PM	39861
Ethylbenzene	ND	0.047		mg/Kg	1	8/20/2018 7:46:35 PM	39861
Xylenes, Total	ND	0.094		mg/Kg	1	8/20/2018 7:46:35 PM	39861
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	8/20/2018 7:46:35 PM	39861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order **1808B01**
Date Reported: **8/31/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Agua Moss Landfarm
Collection Date: 8/15/2018 9:19:00 AM
Lab ID: 1808B01-003 **Matrix:** SOIL **Received Date:** 8/16/2018 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Chloride	ND	30		mg/Kg	20	8/27/2018 3:53:20 PM	40002
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**lrm**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/21/2018 5:34:36 PM	39889
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/21/2018 5:34:36 PM	39889
Surr: DNOP	110	50.6-138		%Rec	1	8/21/2018 5:34:36 PM	39889
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/20/2018 8:09:52 PM	39861
Surr: BFB	87.8	15-316		%Rec	1	8/20/2018 8:09:52 PM	39861
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.024		mg/Kg	1	8/20/2018 8:09:52 PM	39861
Toluene	ND	0.047		mg/Kg	1	8/20/2018 8:09:52 PM	39861
Ethylbenzene	ND	0.047		mg/Kg	1	8/20/2018 8:09:52 PM	39861
Xylenes, Total	ND	0.094		mg/Kg	1	8/20/2018 8:09:52 PM	39861
Surr: 4-Bromofluorobenzene	99.7	80-120		%Rec	1	8/20/2018 8:09:52 PM	39861

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1808B01**
31-Aug-18

Client: Rule Engineering LLC
Project: Agua Moss Landfarm

Sample ID	**MB-40002**	SampType:	**mblk**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**40002**	RunNo:	**53720**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**	SeqNo:	**1773219**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-40002**	SampType:	**lcs**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**40002**	RunNo:	**53720**					
Prep Date:	**8/27/2018**	Analysis Date:	**8/27/2018**	SeqNo:	**1773220**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	93.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808B01**

31-Aug-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**MB-39889**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**39889**	RunNo:	**53591**					
Prep Date:	**8/20/2018**	Analysis Date:	**8/21/2018**	SeqNo:	**1768073**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		102	50.6	138			

Sample ID	**LCS-39889**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**39889**	RunNo:	**53591**					
Prep Date:	**8/20/2018**	Analysis Date:	**8/21/2018**	SeqNo:	**1768074**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	95.6	70	130			
Surr: DNOP	4.6		5.000		91.5	50.6	138			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1808B01**
31-Aug-18

Client: Rule Engineering LLC
Project: Agua Moss Landfarm

Sample ID	**MB-39861**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**PBS**	Batch ID:	**39861**	RunNo:	**53568**
Prep Date:	**8/17/2018**	Analysis Date:	**8/20/2018**	SeqNo:	**1765927** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.0	15	316			

Sample ID	**LCS-39861**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**
Client ID:	**LCSS**	Batch ID:	**39861**	RunNo:	**53568**
Prep Date:	**8/17/2018**	Analysis Date:	**8/20/2018**	SeqNo:	**1765928** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.3	75.9	131			
Surr: BFB	970		1000		96.9	15	316			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808B01**

31-Aug-18

Client: Rule Engineering LLC

Project: Agua Moss Landfarm

Sample ID	**MB-39861**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**39861**	RunNo:	**53568**					
Prep Date:	**8/17/2018**	Analysis Date:	**8/20/2018**	SeqNo:	**1765954**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID	**LCS-39861**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**39861**	RunNo:	**53568**					
Prep Date:	**8/17/2018**	Analysis Date:	**8/20/2018**	SeqNo:	**1765955**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	92.9	77.3	128			
Toluene	0.96	0.050	1.000	0	95.9	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.0	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	97.4	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1808B01 RcptNo: 1

Received By: Anne Thorne 8/16/2018 7:00:00 AM Anne Thorne

Completed By: Anne Thorne 8/17/2018 11:29:04 AM Anne Thorne

Reviewed By: EO 8/17/18

Labeled by: JAB 08/17/18

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: 08/17/18
(<2 or >12 unless noted)
Adjusted?
Checked by: JAB

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
2	1.0	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr, Ste 205

Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:

☒ Standard ☐ Rush _____

Project Name: Agua Moss Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.0

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1808B01	BTEX + ~~MTBE~~ + ~~TMB's~~ (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F,Cl,NO3,NO2,PO4,SO4) 300.0 CCI	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)				Air Bubbles (Y or N)
8/15/18	0957	Soil	Cell #1 Vadose	(1) 4oz Glass	Non	001	X		X					X							
8/15/18	0937	Soil	Cell #2N Vadose	(1) 4oz Glass	Non	002	X		X					X							
8/15/18	0919	Soil	Cell #2S Vadose	(1) 4oz Glass	Non	003	X		X					X							

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/15/18	1713	Heather Woods	Christian Waters	8/15/18	1713
8/15/18	1814	Christian Waters		08/16/18	0700

Remarks: Direct Bill to Agua Moss

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:34:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 13, 2019

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Sunco Landfarm OrderNo.: 1901489

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 1/11/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued January 25, 2019.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 1:15:00 PM
Lab ID: 1901489-001 **Matrix:** SOIL **Received Date:** 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/16/2019 4:18:06 PM	42604
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/16/2019 4:18:06 PM	42604
Surr: DNOP	88.8	50.6-138		%Rec	1	1/16/2019 4:18:06 PM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/15/2019 10:02:18 AM	42588
Surr: BFB	94.8	73.8-119		%Rec	1	1/15/2019 10:02:18 AM	42588
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	1/15/2019 10:02:18 AM	42588
Toluene	ND	0.047		mg/Kg	1	1/15/2019 10:02:18 AM	42588
Ethylbenzene	ND	0.047		mg/Kg	1	1/15/2019 10:02:18 AM	42588
Xylenes, Total	ND	0.093		mg/Kg	1	1/15/2019 10:02:18 AM	42588
Surr: 4-Bromofluorobenzene	89.9	80-120		%Rec	1	1/15/2019 10:02:18 AM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Vadose (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 2:06:00 PM
Lab ID: 1901489-002 **Matrix:** SOIL **Received Date:** 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	1/16/2019 5:30:42 PM	42604
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	1/16/2019 5:30:42 PM	42604
Surr: DNOP	98.8	50.6-138		%Rec	1	1/16/2019 5:30:42 PM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/15/2019 11:10:29 AM	42588
Surr: BFB	93.2	73.8-119		%Rec	1	1/15/2019 11:10:29 AM	42588
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/15/2019 11:10:29 AM	42588
Toluene	ND	0.048		mg/Kg	1	1/15/2019 11:10:29 AM	42588
Ethylbenzene	ND	0.048		mg/Kg	1	1/15/2019 11:10:29 AM	42588
Xylenes, Total	ND	0.096		mg/Kg	1	1/15/2019 11:10:29 AM	42588
Surr: 4-Bromofluorobenzene	87.2	80-120		%Rec	1	1/15/2019 11:10:29 AM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 1:37:00 PM
Lab ID: 1901489-003 **Matrix:** SOIL **Received Date:** 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	1/16/2019 5:55:03 PM	42604
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	1/16/2019 5:55:03 PM	42604
Surr: DNOP	101	50.6-138		%Rec	1	1/16/2019 5:55:03 PM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	1/15/2019 12:18:29 PM	42588
Surr: BFB	90.7	73.8-119		%Rec	1	1/15/2019 12:18:29 PM	42588
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	1/15/2019 12:18:29 PM	42588
Toluene	ND	0.047		mg/Kg	1	1/15/2019 12:18:29 PM	42588
Ethylbenzene	ND	0.047		mg/Kg	1	1/15/2019 12:18:29 PM	42588
Xylenes, Total	ND	0.095		mg/Kg	1	1/15/2019 12:18:29 PM	42588
Surr: 4-Bromofluorobenzene	85.7	80-120		%Rec	1	1/15/2019 12:18:29 PM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treament (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 2:30:00 PM
Lab ID: 1901489-004 **Matrix:** SOIL
Received Date: 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	63	30		mg/Kg	20	1/22/2019 11:34:19 AM	42733
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	180	9.8		mg/Kg	1	1/17/2019 9:08:12 AM	42604
Motor Oil Range Organics (MRO)	730	49		mg/Kg	1	1/17/2019 9:08:12 AM	42604
Surr: DNOP	104	50.6-138		%Rec	1	1/17/2019 9:08:12 AM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/15/2019 12:41:12 PM	42588
Surr: BFB	91.4	73.8-119		%Rec	1	1/15/2019 12:41:12 PM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Treatment (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 2:19:00 PM
Lab ID: 1901489-005 **Matrix:** SOIL
Received Date: 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	87	30		mg/Kg	20	1/22/2019 12:11:33 PM	42733
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	1/17/2019 5:39:12 PM	42604
Motor Oil Range Organics (MRO)	610	48		mg/Kg	1	1/17/2019 5:39:12 PM	42604
Surr: DNOP	160	50.6-138	S	%Rec	1	1/17/2019 5:39:12 PM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	1/15/2019 1:03:56 PM	42588
Surr: BFB	90.2	73.8-119		%Rec	1	1/15/2019 1:03:56 PM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical Report
Lab Order **1901489**
Date Reported: **2/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Treatment (1/9/19)
Project: Agua Moss Sunco Landfarm
Collection Date: 1/9/2019 2:16:00 PM
Lab ID: 1901489-006 **Matrix:** SOIL
Received Date: 1/11/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	51	30		mg/Kg	20	1/22/2019 12:23:57 PM	42733
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **lrm**	
Diesel Range Organics (DRO)	21	9.7		mg/Kg	1	1/17/2019 6:51:33 PM	42604
Motor Oil Range Organics (MRO)	100	48		mg/Kg	1	1/17/2019 6:51:33 PM	42604
Surr: DNOP	99.6	50.6-138		%Rec	1	1/17/2019 6:51:33 PM	42604
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	1/15/2019 1:26:33 PM	42588
Surr: BFB	92.0	73.8-119		%Rec	1	1/15/2019 1:26:33 PM	42588

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

ENERGY LABORATORIES
Trust our People. Trust our Data.
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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B19011092-001
Client Sample ID: 1901489-001B, Cell #1 Vadose 1/9/19

Revised Date: 02/13/19
Report Date: 01/24/19
Collection Date: 01/09/19 13:15
DateReceived: 01/15/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	7.4	wt%		0.2		D2974	01/15/19 14:24 / jlw
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	75	mg/kg		4		ASA10-3	01/21/19 16:00 / cke
Bicarbonate, 1:2	92	mg/kg		4		ASA10-3	01/21/19 16:00 / cke
Carbonate, 1:2	ND	mg/kg		4		ASA10-3	01/21/19 16:00 / cke
Chloride, 1:2	312	mg/kg		1		E300.0	01/22/19 07:26 / rcp
Fluoride, 1:2	4.8	mg/kg	D	0.5		E300.0	01/22/19 07:26 / rcp
Sulfate, 1:2	696	mg/kg		1		E300.0	01/22/19 07:26 / rcp
CHEMICAL CHARACTERISTICS							
Nitrate + Nitrite as N, KCL Extract	2	mg/kg		1		ASA33-8	01/24/19 12:56 / srm
METALS, TOTAL - EPA SW846							
Aluminum	9740	mg/kg		5		SW6010B	01/22/19 16:21 / rlh
Arsenic	4	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Barium	585	mg/kg		1		SW6010B	01/22/19 16:21 / rlh
Boron	7	mg/kg		1		SW6010B	01/22/19 16:21 / rlh
Cadmium	ND	mg/kg		1		SW6010B	01/22/19 16:21 / rlh
Calcium	87800	mg/kg	D	30		SW6010B	01/23/19 18:20 / rlh
Chromium	5	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Cobalt	3	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Copper	4	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Iron	5640	mg/kg	D	30		SW6010B	01/22/19 16:21 / rlh
Lead	5	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Magnesium	5890	mg/kg		5		SW6010B	01/22/19 16:21 / rlh
Manganese	99	mg/kg		1		SW6010B	01/22/19 16:21 / rlh
Mercury	ND	mg/kg		1		SW7471B	01/18/19 14:03 / lrc
Molybdenum	ND	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Nickel	5	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Potassium	923	mg/kg	D	20		SW6010B	01/22/19 16:21 / rlh
Selenium	ND	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Silver	ND	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Sodium	560	mg/kg	D	10		SW6010B	01/22/19 16:21 / rlh
Uranium	ND	mg/kg		1		SW6020	01/23/19 04:20 / jdl
Zinc	19	mg/kg		1		SW6010B	01/22/19 16:21 / rlh

Report Definitions:
RL - Analyte reporting limit
QCL - Quality control limit
D - RL increased due to sample matrix
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B19011092-002
Client Sample ID: 1901489-002B, Cell #2 N Vadose 1/9/19

Revised Date: 02/13/19
Report Date: 01/24/19
Collection Date: 01/09/19 14:06
DateReceived: 01/15/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	9.9	wt%		0.2		D2974	01/15/19 14:26 / jlw
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	114	mg/kg		4		ASA10-3	01/21/19 16:03 / cke
Bicarbonate, 1:2	139	mg/kg		4		ASA10-3	01/21/19 16:03 / cke
Carbonate, 1:2	ND	mg/kg		4		ASA10-3	01/21/19 16:03 / cke
Chloride, 1:2	281	mg/kg		1		E300.0	01/22/19 07:42 / rcd
Fluoride, 1:2	9.9	mg/kg		0.5		E300.0	01/22/19 07:42 / rcd
Sulfate, 1:2	980	mg/kg		1		E300.0	01/22/19 07:42 / rcd
CHEMICAL CHARACTERISTICS							
Nitrate + Nitrite as N, KCL Extract	3	mg/kg		1		ASA33-8	01/24/19 12:58 / srm
METALS, TOTAL - EPA SW846							
Aluminum	14400	mg/kg		5		SW6010B	01/22/19 16:25 / rlh
Arsenic	3	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Barium	218	mg/kg		1		SW6010B	01/22/19 16:25 / rlh
Boron	3	mg/kg		1		SW6010B	01/22/19 16:25 / rlh
Cadmium	ND	mg/kg		1		SW6010B	01/22/19 16:25 / rlh
Calcium	9140	mg/kg	D	9		SW6020	01/23/19 04:24 / jdl
Chromium	6	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Cobalt	4	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Copper	8	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Iron	11200	mg/kg	D	20		SW6010B	01/22/19 16:25 / rlh
Lead	7	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Magnesium	4460	mg/kg		5		SW6010B	01/22/19 16:25 / rlh
Manganese	225	mg/kg		1		SW6010B	01/22/19 16:25 / rlh
Mercury	ND	mg/kg		1		SW7471B	01/18/19 14:07 / lrc
Molybdenum	ND	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Nickel	5	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Potassium	1220	mg/kg	D	6		SW6010B	01/22/19 16:25 / rlh
Selenium	ND	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Silver	ND	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Sodium	1100	mg/kg	D	10		SW6010B	01/22/19 16:25 / rlh
Uranium	ND	mg/kg		1		SW6020	01/23/19 04:24 / jdl
Zinc	22	mg/kg		1		SW6020	01/23/19 04:24 / jdl

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Lab ID: B19011092-003
Client Sample ID: 1901489-003B, Cell #2S Vadose 1/9/19

Revised Date: 02/13/19
Report Date: 01/24/19
Collection Date: 01/09/19 13:37
DateReceived: 01/15/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
PHYSICAL CHARACTERISTICS							
Moisture	7.0	wt%		0.2		D2974	01/15/19 14:27 / jhw
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	121	mg/kg		4		ASA10-3	01/21/19 16:09 / cke
Bicarbonate, 1:2	137	mg/kg		4		ASA10-3	01/21/19 16:09 / cke
Carbonate, 1:2	5	mg/kg		4		ASA10-3	01/21/19 16:09 / cke
Chloride, 1:2	271	mg/kg		1		E300.0	01/22/19 07:57 / rco
Fluoride, 1:2	1.9	mg/kg	D	0.2		E300.0	01/22/19 07:57 / rco
Sulfate, 1:2	90	mg/kg		1		E300.0	01/22/19 07:57 / rco
CHEMICAL CHARACTERISTICS							
Nitrate + Nitrite as N, KCL Extract	1	mg/kg		1		ASA33-8	01/24/19 12:58 / srm
METALS, TOTAL - EPA SW846							
Aluminum	10900	mg/kg		5		SW6010B	01/22/19 16:30 / rlh
Arsenic	2	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Barium	72	mg/kg		1		SW6010B	01/22/19 16:30 / rlh
Boron	3	mg/kg		1		SW6010B	01/22/19 16:30 / rlh
Cadmium	ND	mg/kg		1		SW6010B	01/22/19 16:30 / rlh
Calcium	16900	mg/kg	D	9		SW6020	01/23/19 04:28 / jdl
Chromium	6	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Cobalt	3	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Copper	5	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Iron	8170	mg/kg	D	20		SW6010B	01/22/19 16:30 / rlh
Lead	6	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Magnesium	3090	mg/kg		5		SW6010B	01/22/19 16:30 / rlh
Manganese	155	mg/kg		1		SW6010B	01/22/19 16:30 / rlh
Mercury	ND	mg/kg		1		SW7471B	01/18/19 14:09 / trc
Molybdenum	ND	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Nickel	5	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Potassium	1350	mg/kg	D	6		SW6010B	01/22/19 16:30 / rlh
Selenium	ND	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Silver	ND	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Sodium	467	mg/kg	D	10		SW6010B	01/22/19 16:30 / rlh
Uranium	ND	mg/kg		1		SW6020	01/23/19 04:28 / jdl
Zinc	22	mg/kg		1		SW6010B	01/22/19 16:30 / rlh

Report Definitions:
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QCL - Quality control limit.
D - RL increased due to sample matrix.
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ND - Not detected at the reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/24/19
Work Order: B19011092

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3									Batch: 129556
Lab ID: B19011092-003A DUP	Sample Duplicate				Run: ORIONVERSASTARPRO_190				01/21/19 16:15
Alkalinity, 1:2	128	mg/kg	4.0				6.0	30	
Bicarbonate, 1:2	130	mg/kg	4.0				5.1	30	
Carbonate, 1:2	7.01	mg/kg	4.0				29	30	
Lab ID: LCS-R314226	Laboratory Control Sample				Run: ORIONVERSASTARPRO_190				01/21/19 15:50
Alkalinity, 1:2	198	mg/kg	4.0	84	70	130			
Bicarbonate, 1:2	242	mg/kg	4.0	85	70	130			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/24/19
Work Order: B19011092

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: E300.0									Batch: 129556
Lab ID: LCS-129556	Laboratory Control Sample				Run: IC METROHM 2_190121A				01/22/19 03:59
Chloride, 1:2	84.5	mg/kg	1.0	107	70	130			
Fluoride, 1:2	1.87	mg/kg	0.10	92	70	130			
Sulfate, 1:2	670	mg/kg	1.0	108	70	130			
Lab ID: B19011092-003AMS	Sample Matrix Spike				Run: IC METROHM 2_190121A				01/22/19 08:13
Chloride, 1:2	381	mg/kg	1.0	103	70	130			
Fluoride, 1:2	7.58	mg/kg	0.21	106	70	130			
Sulfate, 1:2	515	mg/kg	1.0	99	70	130			
Lab ID: B19011092-003A DUP	Sample Duplicate				Run: IC METROHM 2_190121A				01/22/19 08:28
Chloride, 1:2	280	mg/kg	1.0				3.3	30	
Fluoride, 1:2	1.94	mg/kg	0.20				2.7	30	
Sulfate, 1:2	88.0	mg/kg	1.0				2.0	30	

Qualifiers:

RL - Analyte reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Revised Date: 02/13/19
Report Date: 01/24/19
Work Order: B19011092

Client: Hall Environmental
Project: Not Indicated

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SA33-S								Batch: OM_1-24-2019_12-52-41PM	
Lab ID: LCS	Laboratory Control Sample				Run: FIA205-B_190124A			01/24/19 12:53	
Nitrate + Nitrite as N, KCL Extract	11.2	mg/kg	1.0	102	70	130			
Lab ID: B19011092-001ADUP	Sample Duplicate				Run: FIA205-B_190124A			01/24/19 12:57	
Nitrate + Nitrite as N, KCL Extract	1.65	mg/kg	1.0				0.6	30	
Lab ID: B19011092-001AMS	Sample Matrix Spike				Run: FIA205-B_190124A			01/24/19 12:57	
Nitrate + Nitrite as N, KCL Extract	6.98	mg/kg	1.0	102	70	130			

Qualifiers:

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B									Analytical Run: ICP203-B_190122A	
Lab ID: QCS	10	Initial Calibration Verification Standard							01/22/19 10:25	
Aluminum		4.16	mg/L	0.10	104	90	110			
Barium		0.743	mg/L	0.10	93	90	110			
Boron		0.831	mg/L	0.10	104	90	110			
Cadmium		0.409	mg/L	0.010	102	90	110			
Iron		3.92	mg/L	0.030	98	90	110			
Magnesium		40.2	mg/L	1.0	100	90	110			
Manganese		4.05	mg/L	0.010	101	90	110			
Potassium		42.0	mg/L	1.0	105	90	110			
Sodium		42.3	mg/L	1.0	106	90	110			
Zinc		0.824	mg/L	0.010	103	90	110			
Lab ID: ICSA	10	Interference Check Sample A							01/22/19 10:29	
Aluminum		555	mg/L	0.10	111	80	120			
Barium		0.0000300	mg/L	0.10						
Boron		-0.00906	mg/L	0.10						
Cadmium		0.0146	mg/L	0.010						
Iron		190	mg/L	0.11	95	80	120			
Magnesium		400	mg/L	1.0	80	80	120			
Manganese		-0.00334	mg/L	0.010						
Potassium		0.000170	mg/L	1.0						
Sodium		-0.0156	mg/L	1.0						
Zinc		-0.000900	mg/L	0.010						
Lab ID: ICSAB	10	Interference Check Sample AB							01/22/19 10:34	
Aluminum		596	mg/L	0.10	119	80	120			
Barium		0.423	mg/L	0.10	85	80	120			
Boron		1.02	mg/L	0.10	102	80	120			
Cadmium		0.930	mg/L	0.010	93	80	120			
Iron		179	mg/L	0.11	89	80	120			
Magnesium		400	mg/L	1.0	80	80	120			
Manganese		0.448	mg/L	0.010	90	80	120			
Potassium		22.2	mg/L	1.0	111	80	120			
Sodium		21.6	mg/L	1.0	108	80	120			
Zinc		1.04	mg/L	0.010	104	80	120			
Method: SW6010B									Batch: 129522	
Lab ID: MB-129522	10	Method Blank			Run: ICP203-B_190122A				01/22/19 15:47	
Aluminum		ND	mg/kg	2						
Barium		ND	mg/kg	0.1						
Boron		ND	mg/kg	1						
Cadmium		ND	mg/kg	0.1						
Iron		ND	mg/kg	20						
Magnesium		ND	mg/kg	1						
Manganese		ND	mg/kg	0.6						
Potassium		ND	mg/kg	6						

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B										Batch: 129522
Lab ID: MB-129522	10	Method Blank				Run: ICP203-B_190122A			01/22/19 15:47	
Sodium		ND	mg/kg	20						
Zinc		ND	mg/kg	0.3						
Lab ID: SRM-129522	10	Standard Reference Material				Run: ICP203-B_190122A			01/22/19 15:59	
Aluminum		18300	mg/kg	5.0	145	42	158			
Barium		448	mg/kg	1.0	83	81	119			
Boron		88.3	mg/kg	1.1	88	64	136			
Cadmium		89.9	mg/kg	1.0	91	86	114			
Iron		8420	mg/kg	15	85	83	117			
Magnesium		2630	mg/kg	5.0	95	63	136			
Manganese		803	mg/kg	1.0	82	79	120			
Potassium		6540	mg/kg	19	104	86	114			
Sodium		986	mg/kg	16	98	80	120			
Zinc		574	mg/kg	2.0	102	85	115			
Lab ID: B19011100-001ADIL	10	Serial Dilution				Run: ICP203-B_190122A			01/22/19 16:38	
Aluminum		ND	mg/kg	8.6					10	
Barium		ND	mg/kg	1.0					10	
Boron		13.5	mg/kg	4.9					10	N
Cadmium		ND	mg/kg	3.9					10	
Iron		ND	mg/kg	75					10	
Magnesium		ND	mg/kg	6.7					10	
Manganese		ND	mg/kg	2.9					10	
Potassium		117	mg/kg	30					10	N
Sodium		ND	mg/kg	80					10	
Zinc		ND	mg/kg	4.8					10	
Lab ID: B19011100-001APDS	10	Post Digestion/Distillation Spike				Run: ICP203-B_190122A			01/22/19 16:51	
Aluminum		400	mg/kg	5.0	160	75	125			S
Barium		38.7	mg/kg	1.0	78	75	125			
Boron		58.6	mg/kg	1.0	93	75	125			
Cadmium		24.8	mg/kg	1.0	100	75	125			
Iron		234	mg/kg	15	94	75	125			
Magnesium		1720	mg/kg	5.0	59	75	125			S
Manganese		257	mg/kg	1.0	103	75	125			
Potassium		2240	mg/kg	6.2	86	75	125			
Sodium		413000	mg/kg	9.9		75	125			A
Zinc		65.6	mg/kg	1.0	131	75	125			S
Lab ID: B19011100-001AMS3	10	Sample Matrix Spike				Run: ICP203-B_190122A			01/22/19 16:55	
Aluminum		377	mg/kg	5.0	158	75	125			S
Barium		37.3	mg/kg	1.0	79	75	125			
Boron		54.3	mg/kg	1.0	88	75	125			
Cadmium		23.9	mg/kg	1.0	101	75	125			
Iron		228	mg/kg	15	97	75	125			

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated

Report Date: 01/24/19
Work Order: B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6010B										Batch: 129522
Lab ID: B19011100-001AMS3	10	Sample Matrix Spike				Run: ICP203-B_190122A			01/22/19 16:55	
Magnesium		1620	mg/kg	5.0	68	75	125			S
Manganese		251	mg/kg	1.0	106	75	125			
Potassium		2090	mg/kg	5.9	84	75	125			
Sodium		404000	mg/kg	9.4		75	125			A
Zinc		63.4	mg/kg	1.0	133	75	125			S
Lab ID: B19011100-001AMSD	10	Sample Matrix Spike Duplicate				Run: ICP203-B_190122A			01/22/19 16:59	
Aluminum		384	mg/kg	5.0	161	75	125	1.9	20	S
Barium		37.4	mg/kg	1.0	79	75	125	0.2	20	
Boron		52.7	mg/kg	1.0	85	75	125	2.9	20	
Cadmium		23.8	mg/kg	1.0	101	75	125	0.4	20	
Iron		228	mg/kg	15	96	75	125	0.3	20	
Magnesium		1610	mg/kg	5.0	68	75	125	0.5	20	S
Manganese		250	mg/kg	1.0	106	75	125	0.2	20	
Potassium		2140	mg/kg	5.9	86	75	125	2.2	20	
Sodium		415000	mg/kg	9.4		75	125	2.7	20	A
Zinc		63.7	mg/kg	1.0	134	75	125	0.5	20	S
Method: SW6010B										Analytical Run: ICP204-B_190123A
Lab ID: QCS		Initial Calibration Verification Standard							01/23/19 10:25	
Calcium		39.9	mg/L	1.0	100	90	110			
Lab ID: ICSA		Interference Check Sample A							01/23/19 10:29	
Calcium		461	mg/L	1.0	92	80	120			
Lab ID: ICSAB		Interference Check Sample AB							01/23/19 10:33	
Calcium		449	mg/L	1.0	90	80	120			
Method: SW6010B										Batch: 129522
Lab ID: MB-129522		Method Blank				Run: ICP204-B_190123A			01/23/19 18:12	
Calcium		ND	mg/kg	9						
Lab ID: SRM-129522		Standard Reference Material				Run: ICP204-B_190123A			01/23/19 18:16	
Calcium		6190	mg/kg	17	97	82	118			
Lab ID: B19011100-001ADIL		Serial Dilution				Run: ICP204-B_190123A			01/23/19 18:29	
Calcium		ND	mg/kg	1100					10	
Lab ID: B19011100-001APDS		Post Digestion/Distillation Spike				Run: ICP204-B_190123A			01/23/19 18:33	
Calcium		61200	mg/kg	830	99	75	125			
Lab ID: B19011100-001AMS3		Sample Matrix Spike				Run: ICP204-B_190123A			01/23/19 18:37	
Calcium		2460	mg/kg	780	104	75	125			
Lab ID: B19011100-001AMSD		Sample Matrix Spike Duplicate				Run: ICP204-B_190123A			01/23/19 18:41	
Calcium		2430	mg/kg	780	103	75	125	1.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020								Analytical Run: ICPMS207-B_190121A		
Lab ID: ICSA	12	Interference Check Sample A								01/21/19 18:23
Arsenic		0.0000561	mg/L	0.0010						
Calcium		114	mg/L	0.021	95	80	120			
Chromium		0.000270	mg/L	0.0010						
Cobalt		0.000565	mg/L	0.0010						
Copper		0.0000977	mg/L	0.0010						
Lead		0.0000819	mg/L	0.0010						
Molybdenum		0.760	mg/L	0.0010	95	80	120			
Nickel		0.000240	mg/L	0.0010						
Selenium		0.000205	mg/L	0.0010						
Silver		7.84E-06	mg/L	0.0010						
Uranium		4.61E-06	mg/L	0.00030						
Zinc		0.000138	mg/L	0.0027						
Lab ID: ICSAB	12	Interference Check Sample AB								01/21/19 18:27
Arsenic		0.0101	mg/L	0.0010	101	80	120			
Calcium		114	mg/L	0.021	95	80	120			
Chromium		0.0198	mg/L	0.0010	99	80	120			
Cobalt		0.0191	mg/L	0.0010	95	80	120			
Copper		0.0192	mg/L	0.0010	96	80	120			
Lead		0.0000910	mg/L	0.0010						
Molybdenum		0.766	mg/L	0.0010	96	80	120			
Nickel		0.0194	mg/L	0.0010	97	80	120			
Selenium		0.00973	mg/L	0.0010	97	80	120			
Silver		0.00462	mg/L	0.0010	92	80	120			
Uranium		1.10E-06	mg/L	0.00030						
Zinc		0.00946	mg/L	0.0027	95	80	120			
Lab ID: QCS	12	Initial Calibration Verification Standard								01/21/19 22:24
Arsenic		0.0498	mg/L	0.0010	100	90	110			
Calcium		2.41	mg/L	0.021	96	90	110			
Chromium		0.0499	mg/L	0.0010	100	90	110			
Cobalt		0.0543	mg/L	0.0010	109	90	110			
Copper		0.0510	mg/L	0.0010	102	90	110			
Lead		0.0546	mg/L	0.0010	109	90	110			
Molybdenum		0.0542	mg/L	0.0010	108	90	110			
Nickel		0.0510	mg/L	0.0010	102	90	110			
Selenium		0.0506	mg/L	0.0010	101	90	110			
Silver		0.0267	mg/L	0.0010	107	90	110			
Uranium		0.0545	mg/L	0.00030	109	90	110			
Zinc		0.0520	mg/L	0.0027	104	90	110			
Method: SW6020										Batch: 129522
Lab ID: MB-129522	12	Method Blank				Run: ICPMS207-B_190121A				01/23/19 04:00
Arsenic		ND	mg/kg	0.3						
Calcium		ND	mg/kg	9						

Qualifiers:

RL - Analyte reporting limit. ND - Not detected at the reporting limit.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020										Batch: 129522
Lab ID: MB-129522	12	Method Blank				Run: ICPMS207-B_190121A			01/23/19 04:00	
Chromium		ND	mg/kg	0.10						
Cobalt		ND	mg/kg	0.01						
Copper		0.2	mg/kg	0.2						
Lead		ND	mg/kg	0.2						
Molybdenum		ND	mg/kg	0.02						
Nickel		ND	mg/kg	0.2						
Selenium		ND	mg/kg	0.5						
Silver		ND	mg/kg	0.04						
Uranium		ND	mg/kg	0.006						
Zinc		ND	mg/kg	0.3						
Lab ID: SRM-129522	12	Standard Reference Material				Run: ICPMS207-B_190121A			01/23/19 04:04	
Arsenic		125	mg/kg	1.6	98	85	115			
Calcium		6310	mg/kg	45	98	82	118			
Chromium		112	mg/kg	1.0	96	81	119			
Cobalt		121	mg/kg	1.0	93	83	117			
Copper		81.5	mg/kg	1.0	91	83	118			
Lead		274	mg/kg	1.1	99	84	116			
Molybdenum		94.6	mg/kg	1.0	95	79	121			
Nickel		107	mg/kg	1.0	100	84	117			
Selenium		242	mg/kg	2.5	100	80	120			
Silver		61.4	mg/kg	1.0	95	86	114			
Uranium		1.35	mg/kg	1.0						
Zinc		535	mg/kg	1.5	96	85	115			
Lab ID: B19011100-001ADIL	12	Serial Dilution				Run: ICPMS207-B_190121A			01/23/19 04:53	
Arsenic		ND	mg/kg	1.5					10	
Calcium		49.5	mg/kg	45					10	N
Chromium		ND	mg/kg	1.0					10	
Cobalt		ND	mg/kg	1.0					10	
Copper		ND	mg/kg	1.0					10	
Lead		22.4	mg/kg	1.1				1.3	10	
Molybdenum		ND	mg/kg	1.0					10	
Nickel		ND	mg/kg	1.0					10	
Selenium		ND	mg/kg	2.5					10	
Silver		ND	mg/kg	1.0					10	
Uranium		ND	mg/kg	1.0					10	
Zinc		ND	mg/kg	1.5					10	
Lab ID: B19011100-001APDS1	12	Post Digestion/Distillation Spike				Run: ICPMS207-B_190121A			01/23/19 04:57	
Arsenic		1.84	mg/kg	1.0	75	75	125			
Calcium		2090	mg/kg	9.1	83	75	125			
Chromium		1.93	mg/kg	1.0	78	75	125			
Cobalt		1.77	mg/kg	1.0	72	75	125			S
Copper		1.90	mg/kg	1.0	68	75	125			S

Qualifiers:

RL - Analyte reporting limit

N - The analyte concentration was not sufficiently high to calculate a RPD for the serial dilution test.

ND - Not detected at the reporting limit.

S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW6020									Batch: 128522	
Lab ID: B19011100-001APDS1	12	Post Digestion/Distillation Spike				Run: ICPMS207-B_190121A			01/23/19 04:57	
Lead		23.5	mg/kg	1.0		75	125			A
Molybdenum		2.41	mg/kg	1.0	98	75	125			
Nickel		1.81	mg/kg	1.0	73	75	125			S
Selenium		1.72	mg/kg	1.0	70	75	125			S
Silver		0.767	mg/kg	1.0	78	75	125			
Uranium		2.27	mg/kg	1.0	92	75	125			
Zinc		1.85	mg/kg	1.0	75	75	125			
Lab ID: B19011100-001AMS3	12	Sample Matrix Spike				Run: ICPMS207-B_190121A			01/23/19 05:01	
Arsenic		42.7	mg/kg	3.0	90	75	125			
Calcium		2280	mg/kg	87	95	75	125			
Chromium		42.9	mg/kg	1.0	91	75	125			
Cobalt		42.9	mg/kg	1.0	91	75	125			
Copper		41.0	mg/kg	1.7	86	75	125			
Lead		54.4	mg/kg	2.1	69	75	125			S
Molybdenum		46.4	mg/kg	1.0	98	75	125			
Nickel		42.3	mg/kg	1.5	89	75	125			
Selenium		41.6	mg/kg	4.8	88	75	125			
Silver		20.5	mg/kg	1.0	87	75	125			
Uranium		45.2	mg/kg	1.0	96	75	125			
Zinc		40.8	mg/kg	2.9	86	75	125			
Lab ID: B19011100-001AMSD	12	Sample Matrix Spike Duplicate				Run: ICPMS207-B_190121A			01/23/19 05:05	
Arsenic		43.4	mg/kg	3.0	92	75	125	1.8	20	
Calcium		2300	mg/kg	87	96	75	125	0.8	20	
Chromium		43.4	mg/kg	1.0	92	75	125	1.2	20	
Cobalt		42.5	mg/kg	1.0	90	75	125	1.1	20	
Copper		41.4	mg/kg	1.7	87	75	125	0.8	20	
Lead		61.2	mg/kg	2.1	83	75	125	12	20	
Molybdenum		46.7	mg/kg	1.0	99	75	125	0.6	20	
Nickel		42.5	mg/kg	1.5	90	75	125	0.5	20	
Selenium		41.1	mg/kg	4.8	87	75	125	1.2	20	
Silver		20.6	mg/kg	1.0	87	75	125	0.7	20	
Uranium		46.0	mg/kg	1.0	97	75	125	1.8	20	
Zinc		41.8	mg/kg	2.9	88	75	125	2.4	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

A - The analyte level was greater than four times the spike level. In accordance with the method % recovery is not calculated.

S - Spike recovery outside of advisory limits.

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Report Date:** 01/24/19

Project: Not Indicated **Work Order:** B19011092

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: SW7471B									Analytical Run: HGCV202-B_190118A	
Lab ID: ICV		Initial Calibration Verification Standard							01/18/19 13:29	
Mercury		0.00210	mg/kg	1.0	105	90	110			
Method: SW7471B									Batch: 129457	
Lab ID: MB-129457		Method Blank				Run: HGCV202-B_190118A			01/18/19 13:34	
Mercury		0.006	mg/kg	0.005						
Lab ID: LCS3-129457		Laboratory Control Sample				Run: HGCV202-B_190118A			01/18/19 13:35	
Mercury		0.239	mg/kg	1.0	116	80	120			
Lab ID: B19010544-002ADIL		Serial Dilution				Run: HGCV202-B_190118A			01/18/19 13:42	
Mercury		ND	mg/kg	1.0					10	
Lab ID: B19010544-002AMS3		Sample Matrix Spike				Run: HGCV202-B_190118A			01/18/19 13:44	
Mercury		0.237	mg/kg	1.0	109	80	120			
Lab ID: B19010544-002AMSD		Sample Matrix Spike Duplicate				Run: HGCV202-B_190118A			01/18/19 13:48	
Mercury		0.242	mg/kg	1.0	110	80	120		20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901489**
13-Feb-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID	**MB-42733**	SampType:	**MBLK**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**PBS**	Batch ID:	**42733**	RunNo:	**57172**					
Prep Date:	**1/22/2019**	Analysis Date:	**1/22/2019**	SeqNo:	**1912442**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID	**LCS-42733**	SampType:	**LCS**	TestCode:	**EPA Method 300.0: Anions**					
Client ID:	**LCSS**	Batch ID:	**42733**	RunNo:	**57172**					
Prep Date:	**1/22/2019**	Analysis Date:	**1/22/2019**	SeqNo:	**1912443**	Units:	**mg/Kg**			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.2	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901489**

13-Feb-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-42604**	SampType:	**MBLK**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**PBS**	Batch ID:	**42604**	RunNo:	**57025**					
Prep Date:	**1/15/2019**	Analysis Date:	**1/16/2019**	SeqNo:	**1907913**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.3		10.00		93.0	50.6	138			

Sample ID	**LCS-42604**	SampType:	**LCS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**LCSS**	Batch ID:	**42604**	RunNo:	**57025**					
Prep Date:	**1/15/2019**	Analysis Date:	**1/16/2019**	SeqNo:	**1907935**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.00	0	102	63.9	124			
Surr: DNOP	4.5		5.000		90.3	50.6	138			

Sample ID	**1901489-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**Cell #1 Vadose (1/9/**	Batch ID:	**42604**	RunNo:	**57032**					
Prep Date:	**1/15/2019**	Analysis Date:	**1/16/2019**	SeqNo:	**1908324**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.5	47.71	0	89.0	53.5	126			
Surr: DNOP	4.1		4.771		85.8	50.6	138			

Sample ID	**1901489-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015M/D: Diesel Range Organics**					
Client ID:	**Cell #1 Vadose (1/9/**	Batch ID:	**42604**	RunNo:	**57032**					
Prep Date:	**1/15/2019**	Analysis Date:	**1/16/2019**	SeqNo:	**1908325**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	44	9.6	48.12	0	91.2	53.5	126	3.27	21.7	
Surr: DNOP	4.2		4.812		88.2	50.6	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1901489**
13-Feb-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID	**MB-42588**	SampType:	**MBLK**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907326**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1000		1000		99.9	73.8	119			

Sample ID	**LCS-42588**	SampType:	**LCS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907327**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	25.00	0	101	80.1	123			
Surr: BFB	1200		1000		120	73.8	119			S

Sample ID	**1901489-001AMS**	SampType:	**MS**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #1 Vadose (1/9/**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907329**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	4.7	23.36	0	116	69.1	142			
Surr: BFB	1100		934.6		120	73.8	119			S

Sample ID	**1901489-001AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8015D: Gasoline Range**					
Client ID:	**Cell #1 Vadose (1/9/**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907330**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.7	23.50	0	111	69.1	142	4.41	20	
Surr: BFB	1100		939.8		112	73.8	119	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1901489**

13-Feb-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID	**MB-42588**	SampType:	**MBLK**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**PBS**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907360**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.95		1.000		94.5	80	120			

Sample ID	**LCS-42588**	SampType:	**LCS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**LCSS**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907361**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.84	0.025	1.000	0	84.4	80	120			
Toluene	0.95	0.050	1.000	0	94.8	80	120			
Ethylbenzene	0.96	0.050	1.000	0	96.5	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.0	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		102	80	120			

Sample ID	**1901489-002AMS**	SampType:	**MS**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Cell #2N Vadose (1/**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907364**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.91	0.023	0.9390	0.01051	95.8	63.9	127			
Toluene	1.0	0.047	0.9390	0	109	69.9	131			
Ethylbenzene	1.1	0.047	0.9390	0.009293	113	71	132			
Xylenes, Total	3.2	0.094	2.817	0.009389	113	71.8	131			
Surr: 4-Bromofluorobenzene	0.87		0.9390		93.0	80	120			

Sample ID	**1901489-002AMSD**	SampType:	**MSD**	TestCode:	**EPA Method 8021B: Volatiles**					
Client ID:	**Cell #2N Vadose (1/**	Batch ID:	**42588**	RunNo:	**57016**					
Prep Date:	**1/14/2019**	Analysis Date:	**1/15/2019**	SeqNo:	**1907365**	Units:	**mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9671	0.01051	93.8	63.9	127	0.852	20	
Toluene	1.0	0.048	0.9671	0	106	69.9	131	0.0649	20	
Ethylbenzene	1.1	0.048	0.9671	0.009293	111	71	132	1.29	20	
Xylenes, Total	3.3	0.097	2.901	0.009389	112	71.8	131	2.26	20	
Surr: 4-Bromofluorobenzene	0.88		0.9671		90.8	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Detection Limit
S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1901489** RcptNo: 1

Received By: **Desiree Dominguez** 1/11/2019 8:05:00 AM

Completed By: **Anne Thorne** 1/14/2019 9:13:55 AM

Reviewed By: ENM 1/14/19
LB: VVZ 1/14/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

VVZ 1/14/19

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	3.3	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Agua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 3.3

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1901489	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions (F, Cl, NO3, NO2, PO4, SO4) See cl	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	WQCC Metals	Major cations + anions*			Air Bubbles (Y or N)
1/9/19	1315	Soil	Cell #1 Vadose (1/9/19)	(2) 4oz Glass	Non	001	X		X									X	X			
1/9/19	1401	Soil	Cell #2N Vadose (1/9/19)	(2) 4oz Glass	Non	002	X		X									X	X			
1/9/19	1337	Soil	Cell #2S Vadose (1/9/19)	(2) 4oz Glass	Non	003	X		X									X	X			
1/9/19	1430	Soil	Cell #1 Treatment (1/9/19)	(1) (2) 4oz Glass HW	Non	004			X					X								
1/9/19	1419	Soil	Cell #2N Treatment (1/9/19)	(1) (2) 4oz Glass HW	Non	005			X					X								
1/9/19	1416	Soil	Cell #2S Treatment (1/9/19)	(1) (2) 4oz Glass HW	Non	006			X					X								

Date:	Time:	Relinquished by:	Received by:	Date	Time
1/10/19	1740	Heather M. Woods		1/10/19	1740
1/10/19	1827			1/11/19	8:05

Courier

Remarks: Direct Bill to Agua Moss - Rates Per Andy
* Chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium, and sodium.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 15, 2019

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX:

RE: Sunco Landfarm OrderNo.: 1904541

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 4/10/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1904541**
Date Reported: **4/15/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1
Project: Sunco Landfarm
Collection Date: 4/9/2019 2:22:00 PM
Lab ID: 1904541-001 **Matrix:** SOIL **Received Date:** 4/10/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2019 12:18:21 AM	44296
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2019 12:18:21 AM	44296
Surr: DNOP	126	70-130		%Rec	1	4/13/2019 12:18:21 AM	44296
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2019 2:25:19 PM	44270
Surr: BFB	92.0	73.8-119		%Rec	1	4/14/2019 2:25:19 PM	44270
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/14/2019 2:25:19 PM	44270
Toluene	ND	0.050		mg/Kg	1	4/14/2019 2:25:19 PM	44270
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2019 2:25:19 PM	44270
Xylenes, Total	ND	0.10		mg/Kg	1	4/14/2019 2:25:19 PM	44270
Surr: 4-Bromofluorobenzene	90.9	80-120		%Rec	1	4/14/2019 2:25:19 PM	44270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **1904541**
Date Reported: **4/15/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N
Project: Sunco Landfarm
Collection Date: 4/9/2019 2:29:00 PM
Lab ID: 1904541-002 **Matrix:** SOIL **Received Date:** 4/10/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	4/13/2019 12:41:55 AM	44296
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	4/13/2019 12:41:55 AM	44296
Surr: DNOP	95.7	70-130		%Rec	1	4/13/2019 12:41:55 AM	44296
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	4/14/2019 2:49:00 PM	44270
Surr: BFB	93.0	73.8-119		%Rec	1	4/14/2019 2:49:00 PM	44270
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/14/2019 2:49:00 PM	44270
Toluene	ND	0.050		mg/Kg	1	4/14/2019 2:49:00 PM	44270
Ethylbenzene	ND	0.050		mg/Kg	1	4/14/2019 2:49:00 PM	44270
Xylenes, Total	ND	0.099		mg/Kg	1	4/14/2019 2:49:00 PM	44270
Surr: 4-Bromofluorobenzene	92.5	80-120		%Rec	1	4/14/2019 2:49:00 PM	44270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

Analytical Report
Lab Order **1904541**
Date Reported: **4/15/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S
Project: Sunco Landfarm
Collection Date: 4/9/2019 2:38:00 PM
Lab ID: 1904541-003 **Matrix:** SOIL **Received Date:** 4/10/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **CLP**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	4/13/2019 1:05:35 AM	44296
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	4/13/2019 1:05:35 AM	44296
Surr: DNOP	96.2	70-130		%Rec	1	4/13/2019 1:05:35 AM	44296
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	4/14/2019 3:12:37 PM	44270
Surr: BFB	93.4	73.8-119		%Rec	1	4/14/2019 3:12:37 PM	44270
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	4/14/2019 3:12:37 PM	44270
Toluene	ND	0.049		mg/Kg	1	4/14/2019 3:12:37 PM	44270
Ethylbenzene	ND	0.049		mg/Kg	1	4/14/2019 3:12:37 PM	44270
Xylenes, Total	ND	0.098		mg/Kg	1	4/14/2019 3:12:37 PM	44270
Surr: 4-Bromofluorobenzene	93.0	80-120		%Rec	1	4/14/2019 3:12:37 PM	44270

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904541**
15-Apr-19

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID: **MB-44296**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **44296**	RunNo: **59115**
Prep Date: **4/11/2019**	Analysis Date: **4/12/2019**	SeqNo: **1990924** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		105	70	130			

Sample ID: **LCS-44296**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **44296**	RunNo: **59115**
Prep Date: **4/11/2019**	Analysis Date: **4/12/2019**	SeqNo: **1990925** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	45	10	50.00	0	90.7	63.9	124			
Surr: DNOP	4.6		5.000		92.9	70	130			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904541**

15-Apr-19

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID: **MB-44253**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44253**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990394** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	910		1000		90.5	73.8	119			

Sample ID: **LCS-44253**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44253**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990395** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1000		1000		103	73.8	119			

Sample ID: **MB-44270**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44270**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990417** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		87.7	73.8	119			

Sample ID: **LCS-44270**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44270**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/14/2019**	SeqNo: **1990418** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	94.2	80.1	123			
Surr: BFB	980		1000		97.7	73.8	119			

Sample ID: **MB-44274**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **44274**	RunNo: **59134**
Prep Date: **4/10/2019**	Analysis Date: **4/14/2019**	SeqNo: **1990660** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	940		1000		93.7	73.8	119			

Sample ID: **LCS-44274**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **44274**	RunNo: **59134**
Prep Date: **4/10/2019**	Analysis Date: **4/14/2019**	SeqNo: **1990661** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1100		1000		107	73.8	119			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1904541**

15-Apr-19

Client: Rule Engineering LLC

Project: Sunco Landfarm

Sample ID: **MB-44253**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44253**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990440** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		90.4	80	120			

Sample ID: **LCS-44253**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44253**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990441** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.96		1.000		95.5	80	120			

Sample ID: **MB-44270**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44270**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/13/2019**	SeqNo: **1990477** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.89		1.000		88.6	80	120			

Sample ID: **LCS-44270**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **44270**	RunNo: **59130**
Prep Date: **4/10/2019**	Analysis Date: **4/14/2019**	SeqNo: **1990499** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	91.8	80	120			
Toluene	0.96	0.050	1.000	0	95.5	80	120			
Ethylbenzene	0.95	0.050	1.000	0	95.4	80	120			
Xylenes, Total	2.9	0.10	3.000	0	96.2	80	120			
Surr: 4-Bromofluorobenzene	0.91		1.000		90.7	80	120			

Sample ID: **MB-44274**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **44274**	RunNo: **59134**
Prep Date: **4/10/2019**	Analysis Date: **4/14/2019**	SeqNo: **1990691** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		92.6	80	120			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1904541**
15-Apr-19

Client: Rule Engineering LLC
Project: Sunco Landfarm

Sample ID: **LCS-44274** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **44274** RunNo: **59134**
Prep Date: **4/10/2019** Analysis Date: **4/14/2019** SeqNo: **1990692** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.93		1.000		92.5	80	120			

Qualifiers:

E	Value above quantitation range
ND	Not Detected at the Reporting Limit
RL	Reporting Detection Limit
W	Sample container temperature is out of limit as specified at testcode
H	Holding times for preparation or analysis exceeded
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1904541** RcptNo: **1**

Received By: **Erin Melendrez** **4/10/2019 8:10:00 AM**

Completed By: **Erin Melendrez** **4/10/2019 8:41:53 AM**

Reviewed By: LB 4/10/19

LB: DAD 4/10/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: DAD 4/10/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.2	Good	Yes			
2	4.8	Good	Yes			
3	0.6	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☑ Standard ☐ Rush

Project Name: Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 3

Cooler Temp(including CF): 2.2°C, 4.3°C, 0.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1904541	BTEX / MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
4/9/19	1422	Soil	Cell #1	(1) 4oz Glass	—	-001	X	X								
4/9/19	1429	Soil	Cell #2N	(1) 4oz Glass	—	-002	X	X								
4/9/19	1438	Soil	Cell #2S	(1) 4oz Glass	—	-003	X	X								

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
4/9/19	1834	Heather M. Woods				
4/9/19	1840			Courier	4/10/19	0810

Remarks: Direct Bill to Agua Moss

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

June 13, 2019

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Sunco Landfarm OrderNo.: 1906323

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/6/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 9:45:00 AM
Lab ID: 1906323-001 **Matrix:** SOIL
Received Date: 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	580	60		mg/Kg	20	6/11/2019 12:55:40 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	6/10/2019 6:46:38 PM	45447
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	6/10/2019 6:46:38 PM	45447
Surr: DNOP	129	70-130		%Rec	1	6/10/2019 6:46:38 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 1:43:37 PM	45436
Surr: BFB	96.8	73.8-119		%Rec	1	6/10/2019 1:43:37 PM	45436
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/10/2019 1:43:37 PM	45436
Toluene	ND	0.050		mg/Kg	1	6/10/2019 1:43:37 PM	45436
Ethylbenzene	ND	0.050		mg/Kg	1	6/10/2019 1:43:37 PM	45436
Xylenes, Total	ND	0.099		mg/Kg	1	6/10/2019 1:43:37 PM	45436
Surr: 4-Bromofluorobenzene	96.3	80-120		%Rec	1	6/10/2019 1:43:37 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 9:35:00 AM
Lab ID: 1906323-002 **Matrix:** SOIL **Received Date:** 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	610	59		mg/Kg	20	6/11/2019 1:57:43 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/10/2019 7:08:51 PM	45447
Motor Oil Range Organics (MRO)	65	50		mg/Kg	1	6/10/2019 7:08:51 PM	45447
Surr: DNOP	121	70-130		%Rec	1	6/10/2019 7:08:51 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 2:51:31 PM	45436
Surr: BFB	100	73.8-119		%Rec	1	6/10/2019 2:51:31 PM	45436
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/10/2019 2:51:31 PM	45436
Toluene	ND	0.050		mg/Kg	1	6/10/2019 2:51:31 PM	45436
Ethylbenzene	ND	0.050		mg/Kg	1	6/10/2019 2:51:31 PM	45436
Xylenes, Total	ND	0.10		mg/Kg	1	6/10/2019 2:51:31 PM	45436
Surr: 4-Bromofluorobenzene	98.4	80-120		%Rec	1	6/10/2019 2:51:31 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 9:25:00 AM
Lab ID: 1906323-003 **Matrix:** SOIL **Received Date:** 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	490	60		mg/Kg	20	6/11/2019 2:10:08 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	6/10/2019 7:31:08 PM	45447
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	6/10/2019 7:31:08 PM	45447
Surr: DNOP	102	70-130		%Rec	1	6/10/2019 7:31:08 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 3:59:27 PM	45436
Surr: BFB	99.7	73.8-119		%Rec	1	6/10/2019 3:59:27 PM	45436
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	6/10/2019 3:59:27 PM	45436
Toluene	ND	0.050		mg/Kg	1	6/10/2019 3:59:27 PM	45436
Ethylbenzene	ND	0.050		mg/Kg	1	6/10/2019 3:59:27 PM	45436
Xylenes, Total	ND	0.10		mg/Kg	1	6/10/2019 3:59:27 PM	45436
Surr: 4-Bromofluorobenzene	97.6	80-120		%Rec	1	6/10/2019 3:59:27 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 11:05:00 AM
Lab ID: 1906323-004 **Matrix:** SOIL
Received Date: 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	ND	59		mg/Kg	20	6/11/2019 2:22:33 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	94	9.6		mg/Kg	1	6/12/2019 6:17:56 PM	45447
Motor Oil Range Organics (MRO)	730	48		mg/Kg	1	6/12/2019 6:17:56 PM	45447
Surr: DNOP	132	70-130	S	%Rec	1	6/12/2019 6:17:56 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 4:22:08 PM	45436
Surr: BFB	98.0	73.8-119		%Rec	1	6/10/2019 4:22:08 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 10:45:00 AM
Lab ID: 1906323-005 **Matrix:** SOIL **Received Date:** 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	200	60		mg/Kg	20	6/11/2019 2:34:58 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	530	98		mg/Kg	10	6/10/2019 8:15:33 PM	45447
Motor Oil Range Organics (MRO)	4700	490		mg/Kg	10	6/10/2019 8:15:33 PM	45447
Surr: DNOP	0	70-130	S	%Rec	10	6/10/2019 8:15:33 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 4:44:45 PM	45436
Surr: BFB	97.6	73.8-119		%Rec	1	6/10/2019 4:44:45 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1906323**
Date Reported: **6/13/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 6/5/2019 10:30:00 AM
Lab ID: 1906323-006 **Matrix:** SOIL
Received Date: 6/6/2019 8:05:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **smb**	
Chloride	210	60		mg/Kg	20	6/11/2019 2:47:23 PM	45491
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	240	98		mg/Kg	10	6/10/2019 8:37:45 PM	45447
Motor Oil Range Organics (MRO)	2700	490		mg/Kg	10	6/10/2019 8:37:45 PM	45447
Surr: DNOP	0	70-130	S	%Rec	10	6/10/2019 8:37:45 PM	45447
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/10/2019 5:07:22 PM	45436
Surr: BFB	96.2	73.8-119		%Rec	1	6/10/2019 5:07:22 PM	45436

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906323**

13-Jun-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-45491**	SampType: **MBLK**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **45491**	RunNo: **60552**
Prep Date: **6/11/2019**	Analysis Date: **6/11/2019**	SeqNo: **2049652** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-45491**	SampType: **LCS**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **45491**	RunNo: **60552**
Prep Date: **6/11/2019**	Analysis Date: **6/11/2019**	SeqNo: **2049653** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	95.4	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906323**

13-Jun-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-45447**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45447**	RunNo: **60523**
Prep Date: **6/7/2019**	Analysis Date: **6/10/2019**	SeqNo: **2047869** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	92.6	63.9	124			
Surr: DNOP	4.6		5.000		92.2	70	130			

Sample ID: **MB-45447**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45447**	RunNo: **60523**
Prep Date: **6/7/2019**	Analysis Date: **6/10/2019**	SeqNo: **2047870** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		111	70	130			

Sample ID: **MB-45534**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45534**	RunNo: **60580**
Prep Date: **6/12/2019**	Analysis Date: **6/12/2019**	SeqNo: **2049863** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.7		10.00		96.8	70	130			

Sample ID: **LCS-45534**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45534**	RunNo: **60580**
Prep Date: **6/12/2019**	Analysis Date: **6/12/2019**	SeqNo: **2049866** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.4		5.000		87.9	70	130			

Sample ID: **MB-45479**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **45479**	RunNo: **60537**
Prep Date: **6/10/2019**	Analysis Date: **6/11/2019**	SeqNo: **2049887** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.5		10.00		94.7	70	130			

Sample ID: **LCS-45479**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **45479**	RunNo: **60580**
Prep Date: **6/10/2019**	Analysis Date: **6/12/2019**	SeqNo: **2050992** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.9		5.000		98.8	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906323**

13-Jun-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-45436** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047779** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.6	73.8	119			

Sample ID: **LCS-45436** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047780** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	80.1	123			
Surr: BFB	1100		1000		112	73.8	119			

Sample ID: **1906323-001AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **Cell #1 Vadose** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047794** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	24.93	0	87.5	69.1	142			
Surr: BFB	1100		997.0		110	73.8	119			

Sample ID: **1906323-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **Cell #1 Vadose** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047795** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	21	5.0	24.95	0	86.1	69.1	142	1.51	20	
Surr: BFB	1100		998.0		108	73.8	119	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1906323**

13-Jun-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-45436** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047816** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.94		1.000		93.6	80	120			

Sample ID: **LCS-45436** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047817** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	101	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.9	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Sample ID: **1906323-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **Cell #2N Vadose** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047821** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9921	0	103	63.9	127			
Toluene	1.0	0.050	0.9921	0	102	69.9	131			
Ethylbenzene	1.0	0.050	0.9921	0.006853	101	71	132			
Xylenes, Total	2.9	0.099	2.976	0	98.9	71.8	131			
Surr: 4-Bromofluorobenzene	1.0		0.9921		104	80	120			

Sample ID: **1906323-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **Cell #2N Vadose** Batch ID: **45436** RunNo: **60518**

Prep Date: **6/7/2019** Analysis Date: **6/10/2019** SeqNo: **2047822** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9970	0	100	63.9	127	1.98	20	
Toluene	0.99	0.050	0.9970	0	99.2	69.9	131	2.45	20	
Ethylbenzene	0.98	0.050	0.9970	0.006853	97.8	71	132	2.57	20	
Xylenes, Total	2.9	0.10	2.991	0	95.7	71.8	131	2.83	20	
Surr: 4-Bromofluorobenzene	1.1		0.9970		107	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1906323** RcptNo: 1

Received By: **Erin Melendrez** **6/6/2019 8:05:00 AM**

Completed By: **Yazmine Garduno** **6/6/2019 4:48:46 PM**

Reviewed By: YG 6/7/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☑	No ☐	NA ☐
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted?

Checked by: DAD 6/7/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.1	Good	Yes			
2	2.5	Good	Yes			
3	1.6	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Agua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 3 (CF=0)

Cooler Temp(including CF): 2.1°C, 2.5°C, 1.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1906323	BTEX / MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Sep. Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
6/5/19	0945	Soil	Cell #1 Vadose	(1) 4oz Glass	NON	-001	X	X					X			
6/5/19	0935	Soil	Cell #2N Vadose	(1) 4oz Glass	NON	-002	X	X					X			
6/5/19	0925	Soil	Cell #2S Vadose	(1) 4oz Glass	NON	-003	X	X					X			
6/5/19	1105	Soil	Cell #1 Treatment	(1) 4oz Glass	NON	-004		X					X			
6/5/19	1045	Soil	Cell #2N Treatment	(1) 4oz Glass	NON	-005		X					X			
6/5/19	1030	Soil	Cell #2S Treatment	(1) 4oz Glass	NON	-006		X					X			

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
6/5/19	1650	Heather M. Woods	Christin Walker		6/5/19	1650
6/5/19	1811	Christin Walker		Courier	6/6/19	0805

Remarks:
Direct Bill to Agua Moss
c/o Philana Thompson
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

September 26, 2019

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX:

RE: Agua Moss Sunco Landfarm OrderNo.: 1909D13

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 9/24/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1909D13**
Date Reported: **9/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1
Project: Agua Moss Sunco Landfarm
Collection Date: 9/23/2019 8:50:00 AM
Lab ID: 1909D13-001 **Matrix:** SOIL
Received Date: 9/24/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	9/25/2019 4:27:47 PM	47696
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	9/25/2019 4:27:47 PM	47696
Surr: DNOP	92.9	70-130		%Rec	1	9/25/2019 4:27:47 PM	47696
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	9/25/2019 5:13:46 PM	47691
Surr: BFB	97.0	77.4-118		%Rec	1	9/25/2019 5:13:46 PM	47691
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	9/25/2019 5:13:46 PM	47691
Toluene	ND	0.047		mg/Kg	1	9/25/2019 5:13:46 PM	47691
Ethylbenzene	ND	0.047		mg/Kg	1	9/25/2019 5:13:46 PM	47691
Xylenes, Total	ND	0.094		mg/Kg	1	9/25/2019 5:13:46 PM	47691
Surr: 4-Bromofluorobenzene	97.6	80-120		%Rec	1	9/25/2019 5:13:46 PM	47691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1909D13**
Date Reported: **9/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N
Project: Agua Moss Sunco Landfarm
Collection Date: 9/23/2019 8:25:00 AM
Lab ID: 1909D13-002 **Matrix:** SOIL
Received Date: 9/24/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	9/25/2019 4:49:53 PM	47696
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	9/25/2019 4:49:53 PM	47696
Surr: DNOP	89.6	70-130		%Rec	1	9/25/2019 4:49:53 PM	47696
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/25/2019 5:36:35 PM	47691
Surr: BFB	96.3	77.4-118		%Rec	1	9/25/2019 5:36:35 PM	47691
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	9/25/2019 5:36:35 PM	47691
Toluene	ND	0.049		mg/Kg	1	9/25/2019 5:36:35 PM	47691
Ethylbenzene	ND	0.049		mg/Kg	1	9/25/2019 5:36:35 PM	47691
Xylenes, Total	ND	0.098		mg/Kg	1	9/25/2019 5:36:35 PM	47691
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	1	9/25/2019 5:36:35 PM	47691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1909D13**
Date Reported: **9/26/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S
Project: Agua Moss Sunco Landfarm
Collection Date: 9/23/2019 8:35:00 AM
Lab ID: 1909D13-003 **Matrix:** SOIL
Received Date: 9/24/2019 8:10:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	9/25/2019 5:12:07 PM	47696
Motor Oil Range Organics (MRO)	ND	51		mg/Kg	1	9/25/2019 5:12:07 PM	47696
Surr: DNOP	91.2	70-130		%Rec	1	9/25/2019 5:12:07 PM	47696
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	**NSB**
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	9/25/2019 5:59:26 PM	47691
Surr: BFB	98.5	77.4-118		%Rec	1	9/25/2019 5:59:26 PM	47691
EPA METHOD 8021B: VOLATILES						Analyst:	**NSB**
Benzene	ND	0.025		mg/Kg	1	9/25/2019 5:59:26 PM	47691
Toluene	ND	0.049		mg/Kg	1	9/25/2019 5:59:26 PM	47691
Ethylbenzene	ND	0.049		mg/Kg	1	9/25/2019 5:59:26 PM	47691
Xylenes, Total	ND	0.099		mg/Kg	1	9/25/2019 5:59:26 PM	47691
Surr: 4-Bromofluorobenzene	98.4	80-120		%Rec	1	9/25/2019 5:59:26 PM	47691

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909D13**

26-Sep-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-47696**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **47696**	RunNo: **63180**
Prep Date: **9/24/2019**	Analysis Date: **9/25/2019**	SeqNo: **2155516** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.6	63.9	124			
Surr: DNOP	4.2		5.000		84.6	70	130			

Sample ID: **MB-47696**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **47696**	RunNo: **63180**
Prep Date: **9/24/2019**	Analysis Date: **9/25/2019**	SeqNo: **2155521** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	8.9		10.00		89.2	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909D13**

26-Sep-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-47691**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **47691**	RunNo: **63199**
Prep Date: **9/24/2019**	Analysis Date: **9/25/2019**	SeqNo: **2156070** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	960		1000		95.9	77.4	118			

Sample ID: **LCS-47691**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **47691**	RunNo: **63199**
Prep Date: **9/24/2019**	Analysis Date: **9/25/2019**	SeqNo: **2156071** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	27	5.0	25.00	0	108	80	120			
Surr: BFB	1100		1000		111	77.4	118			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1909D13**

26-Sep-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-47691** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **47691** RunNo: **63199**

Prep Date: **9/24/2019** Analysis Date: **9/25/2019** SeqNo: **2156098** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	0.97		1.000		96.6	80	120			

Sample ID: **LCS-47691** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **47691** RunNo: **63199**

Prep Date: **9/24/2019** Analysis Date: **9/25/2019** SeqNo: **2156099** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	97.9	80	120			
Toluene	1.0	0.050	1.000	0	102	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.0	0.10	3.000	0	101	80	120			
Surr: 4-Bromofluorobenzene	1.0		1.000		104	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1909D13** RcptNo: **1**

Received By: **Erin Melendrez** **9/24/2019 8:10:00 AM**

Completed By: **Yazmine Garduno** **9/24/2019 9:58:19 AM**

Reviewed By: IO 9/24/19

Chain of Custody

1. Is Chain of Custody complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: DAD 9/24/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	0.9	Good				
2	3.6	Good				

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☑ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Agua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 1.1-0.2(CF)=0.9°C
3.8-0.2(CF)=3.6°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1909D13	BTEX / ~~MTBE~~ / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)
9/23/19	0850	Soil	Cell #1	(1) 4oz Glass	Non	-001	X	X								
9/23/19	0825	Soil	Cell #2N	(1) 4oz Glass	Non	-002	X	X								
9/23/19	0835	Soil	Cell #2S	(1) 4oz Glass	Non	-003	X	X								

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
9/23/19	1705	Heather M. Woods	Christian Walker		9/23/19	1705
9/23/19	1811	Christian Walker		Courier	9/24/19	0810

Remarks:
Direct Bill to Agua Moss
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

February 14, 2020

Heather Woods

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Sunco Landfarm OrderNo.: 1912C68

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 12/26/2019 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued January 15, 2020.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman

Laboratory Manager

4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:25:00 AM
Lab ID: 1912C68-001 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Fluoride	4.5	1.5		mg/Kg	5	12/28/2019 3:40:18 AM	49542
Chloride	310	30		mg/Kg	20	12/28/2019 3:52:38 AM	49542
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	12/28/2019 3:40:18 AM	49542
Nitrogen, Nitrate (As N)	4.7	1.5		mg/Kg	5	12/28/2019 3:40:18 AM	49542
Sulfate	3700	75		mg/Kg	50	12/30/2019 7:11:20 PM	49542
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	1/3/2020 5:07:15 PM	49617
EPA METHOD 6010B: SOIL METALS						Analyst: **rde**	
Aluminum	12000	300		mg/Kg	100	1/7/2020 1:09:53 PM	49554
Antimony	ND	5.0		mg/Kg	2	1/7/2020 1:08:07 PM	49554
Arsenic	ND	5.0		mg/Kg	2	1/9/2020 2:01:30 PM	49554
Barium	330	0.20		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Beryllium	0.51	0.30		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Boron	10	4.0		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Cadmium	ND	0.20		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Calcium	82000	2500		mg/Kg	100	1/7/2020 1:09:53 PM	49554
Chromium	5.6	0.60		mg/Kg	2	1/7/2020 1:08:07 PM	49554
Cobalt	2.6	0.60		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Copper	5.4	0.60		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Iron	8600	250		mg/Kg	100	1/7/2020 1:09:53 PM	49554
Lead	1.6	0.50		mg/Kg	2	1/9/2020 4:43:56 PM	49554
Magnesium	4600	50		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Manganese	120	0.20		mg/Kg	2	1/14/2020 11:25:56 AM	49554
Molybdenum	ND	0.80		mg/Kg	2	1/7/2020 1:08:07 PM	49554
Nickel	6.3	1.0		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Potassium	1400	100		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Selenium	ND	5.0		mg/Kg	2	1/9/2020 2:01:30 PM	49554
Silver	ND	0.50		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Sodium	540	50		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Uranium	ND	10		mg/Kg	2	1/3/2020 12:12:04 PM	49554
Zinc	16	5.0		mg/Kg	2	1/7/2020 1:08:07 PM	49554
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	12/31/2019 9:59:03 AM	49555
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	12/31/2019 9:59:03 AM	49555
Surr: DNOP	92.2	70-130		%Rec	1	12/31/2019 9:59:03 AM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2019 5:07:58 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:25:00 AM
Lab ID: 1912C68-001 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Surr: BFB	77.6	66.6-105		%Rec	1	12/27/2019 5:07:58 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 5:07:58 PM	49528
Toluene	ND	0.049		mg/Kg	1	12/27/2019 5:07:58 PM	49528
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2019 5:07:58 PM	49528
Xylenes, Total	ND	0.099		mg/Kg	1	12/27/2019 5:07:58 PM	49528
Surr: 4-Bromofluorobenzene	94.8	80-120		%Rec	1	12/27/2019 5:07:58 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 N Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:15:00 AM
Lab ID: 1912C68-002 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Fluoride	ND	1.5		mg/Kg	5	12/28/2019 4:04:58 AM	49542
Chloride	390	30		mg/Kg	20	12/28/2019 4:17:19 AM	49542
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	12/28/2019 4:04:58 AM	49542
Nitrogen, Nitrate (As N)	28	1.5		mg/Kg	5	12/28/2019 4:04:58 AM	49542
Sulfate	63	7.5		mg/Kg	5	12/28/2019 4:04:58 AM	49542
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	1/3/2020 5:09:13 PM	49617
EPA METHOD 6010B: SOIL METALS						Analyst: **rde**	
Aluminum	18000	300		mg/Kg	100	1/7/2020 1:13:15 PM	49554
Antimony	ND	5.0		mg/Kg	2	1/7/2020 1:11:27 PM	49554
Arsenic	ND	5.0		mg/Kg	2	1/9/2020 2:03:02 PM	49554
Barium	150	0.20		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Beryllium	0.78	0.30		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Boron	4.2	4.0		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Cadmium	ND	0.20		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Calcium	16000	2500		mg/Kg	100	1/7/2020 1:13:15 PM	49554
Chromium	8.3	0.60		mg/Kg	2	1/7/2020 1:11:27 PM	49554
Cobalt	4.9	0.60		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Copper	9.3	0.60		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Iron	16000	250		mg/Kg	100	1/7/2020 1:13:15 PM	49554
Lead	4.3	0.50		mg/Kg	2	1/9/2020 4:45:36 PM	49554
Magnesium	5000	50		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Manganese	270	0.20		mg/Kg	2	1/14/2020 11:27:27 AM	49554
Molybdenum	ND	0.80		mg/Kg	2	1/7/2020 1:11:27 PM	49554
Nickel	9.8	1.0		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Potassium	1900	100		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Selenium	ND	5.0		mg/Kg	2	1/9/2020 2:03:02 PM	49554
Silver	ND	0.50		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Sodium	300	50		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Uranium	ND	10		mg/Kg	2	1/3/2020 12:13:54 PM	49554
Zinc	31	5.0		mg/Kg	2	1/7/2020 1:11:27 PM	49554
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/31/2019 10:26:36 AM	49555
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	12/31/2019 10:26:36 AM	49555
Surr: DNOP	101	70-130		%Rec	1	12/31/2019 10:26:36 AM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2019 6:18:35 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 N Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:15:00 AM
Lab ID: 1912C68-002 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Surr: BFB	78.8	66.6-105		%Rec	1	12/27/2019 6:18:35 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 6:18:35 PM	49528
Toluene	ND	0.049		mg/Kg	1	12/27/2019 6:18:35 PM	49528
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2019 6:18:35 PM	49528
Xylenes, Total	ND	0.098		mg/Kg	1	12/27/2019 6:18:35 PM	49528
Surr: 4-Bromofluorobenzene	96.5	80-120		%Rec	1	12/27/2019 6:18:35 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:05:00 AM
Lab ID: 1912C68-003 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Fluoride	2.7	1.5		mg/Kg	5	12/28/2019 4:29:39 AM	49542
Chloride	100	7.5		mg/Kg	5	12/28/2019 4:29:39 AM	49542
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	12/28/2019 4:29:39 AM	49542
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	12/28/2019 4:29:39 AM	49542
Sulfate	740	7.5		mg/Kg	5	12/28/2019 4:29:39 AM	49542
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	1/3/2020 5:11:11 PM	49617
EPA METHOD 6010B: SOIL METALS						Analyst: **rde**	
Aluminum	4600	300		mg/Kg	100	1/7/2020 1:16:30 PM	49554
Antimony	ND	5.0		mg/Kg	2	1/7/2020 1:14:49 PM	49554
Arsenic	ND	5.0		mg/Kg	2	1/9/2020 2:04:34 PM	49554
Barium	110	0.20		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Beryllium	ND	0.30		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Boron	ND	4.0		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Cadmium	ND	0.20		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Calcium	3400	50		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Chromium	1.7	0.60		mg/Kg	2	1/7/2020 1:14:49 PM	49554
Cobalt	1.8	0.60		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Copper	2.6	0.60		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Iron	4800	250		mg/Kg	100	1/7/2020 1:16:30 PM	49554
Lead	2.4	0.50		mg/Kg	2	1/9/2020 4:47:21 PM	49554
Magnesium	1700	50		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Manganese	170	0.20		mg/Kg	2	1/14/2020 11:28:59 AM	49554
Molybdenum	ND	0.81		mg/Kg	2	1/7/2020 1:14:49 PM	49554
Nickel	3.0	1.0		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Potassium	450	100		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Selenium	ND	5.0		mg/Kg	2	1/9/2020 2:04:34 PM	49554
Silver	ND	0.50		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Sodium	390	50		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Uranium	ND	10		mg/Kg	2	1/3/2020 12:15:51 PM	49554
Zinc	10	5.0		mg/Kg	2	1/7/2020 1:14:49 PM	49554
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.3		mg/Kg	1	12/31/2019 10:35:43 AM	49555
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	12/31/2019 10:35:43 AM	49555
Surr: DNOP	107	70-130		%Rec	1	12/31/2019 10:35:43 AM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/27/2019 7:29:08 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:05:00 AM
Lab ID: 1912C68-003 **Matrix:** SOIL **Received Date:** 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Surr: BFB	75.9	66.6-105		%Rec	1	12/27/2019 7:29:08 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 7:29:08 PM	49528
Toluene	ND	0.050		mg/Kg	1	12/27/2019 7:29:08 PM	49528
Ethylbenzene	ND	0.050		mg/Kg	1	12/27/2019 7:29:08 PM	49528
Xylenes, Total	ND	0.099		mg/Kg	1	12/27/2019 7:29:08 PM	49528
Surr: 4-Bromofluorobenzene	92.8	80-120		%Rec	1	12/27/2019 7:29:08 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:35:00 AM
Lab ID: 1912C68-004 **Matrix:** SOIL
Received Date: 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	60	H	mg/Kg	20	2/12/2020 3:35:33 PM	50417
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	89	49		mg/Kg	5	12/31/2019 12:50:41 PM	49555
Motor Oil Range Organics (MRO)	410	240		mg/Kg	5	12/31/2019 12:50:41 PM	49555
Surr: DNOP	84.8	70-130		%Rec	5	12/31/2019 12:50:41 PM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	12/27/2019 7:52:39 PM	49528
Surr: BFB	76.0	66.6-105		%Rec	1	12/27/2019 7:52:39 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 7:52:39 PM	49528
Toluene	ND	0.049		mg/Kg	1	12/27/2019 7:52:39 PM	49528
Ethylbenzene	ND	0.049		mg/Kg	1	12/27/2019 7:52:39 PM	49528
Xylenes, Total	ND	0.099		mg/Kg	1	12/27/2019 7:52:39 PM	49528
Surr: 4-Bromofluorobenzene	93.5	80-120		%Rec	1	12/27/2019 7:52:39 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2N Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:45:00 AM
Lab ID: 1912C68-005 **Matrix:** SOIL
Received Date: 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	210	60	H	mg/Kg	20	2/12/2020 3:47:54 PM	50417
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	220	97		mg/Kg	10	12/31/2019 10:54:02 AM	49555
Motor Oil Range Organics (MRO)	1600	480		mg/Kg	10	12/31/2019 10:54:02 AM	49555
Surr: DNOP	0	70-130	S	%Rec	10	12/31/2019 10:54:02 AM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/27/2019 8:39:37 PM	49528
Surr: BFB	73.4	66.6-105		%Rec	1	12/27/2019 8:39:37 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 8:39:37 PM	49528
Toluene	ND	0.050		mg/Kg	1	12/27/2019 8:39:37 PM	49528
Ethylbenzene	ND	0.050		mg/Kg	1	12/27/2019 8:39:37 PM	49528
Xylenes, Total	ND	0.10		mg/Kg	1	12/27/2019 8:39:37 PM	49528
Surr: 4-Bromofluorobenzene	89.8	80-120		%Rec	1	12/27/2019 8:39:37 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1912C68**
Date Reported: **2/14/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2S Treatment
Project: Agua Moss Sunco Landfarm
Collection Date: 12/24/2019 9:55:00 AM
Lab ID: 1912C68-006 **Matrix:** SOIL
Received Date: 12/26/2019 7:55:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **CAS**	
Chloride	ND	61	H	mg/Kg	20	2/12/2020 4:00:15 PM	50417
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	24	9.2		mg/Kg	1	12/31/2019 12:33:32 PM	49555
Motor Oil Range Organics (MRO)	100	46		mg/Kg	1	12/31/2019 12:33:32 PM	49555
Surr: DNOP	87.1	70-130		%Rec	1	12/31/2019 12:33:32 PM	49555
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	12/27/2019 9:26:25 PM	49528
Surr: BFB	74.1	66.6-105		%Rec	1	12/27/2019 9:26:25 PM	49528
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	12/27/2019 9:26:25 PM	49528
Toluene	ND	0.050		mg/Kg	1	12/27/2019 9:26:25 PM	49528
Ethylbenzene	ND	0.050		mg/Kg	1	12/27/2019 9:26:25 PM	49528
Xylenes, Total	ND	0.10		mg/Kg	1	12/27/2019 9:26:25 PM	49528
Surr: 4-Bromofluorobenzene	91.8	80-120		%Rec	1	12/27/2019 9:26:25 PM	49528

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

ANALYTICAL SUMMARY REPORT

January 14, 2020

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B19122213

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 12/27/2019 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B19122213-001	1912C68-001C, Cell #1 Vadose	12/24/19 9:25	12/27/19	Soil	Alkalinity, Water Extractable DI Water Soil Extract ASA10-3
B19122213-002	1912C68-002C, Cell #2 N Vadose	12/24/19 9:15	12/27/19	Soil	Same As Above
B19122213-003	1912C68-003C, Cell #2S Vadose	12/24/19 9:05	12/27/19	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

Sonya Mallett
Soil Department Supervisor

Digitally signed by
Sonya Mallett
Date: 2020.01.14 16:10:46 -07:00

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Report Date: 01/14/20

Lab ID: B19122213-001
Client Sample ID: 1912C68-001C, Cell #1 Vadose
Collection Date: 12/24/19 09:25
DateReceived: 12/27/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	91	mg/kg		4		ASA10-3	01/14/20 11:00 / gie

Lab ID: B19122213-002
Client Sample ID: 1912C68-002C, Cell #2 N Vadose
Collection Date: 12/24/19 09:15
DateReceived: 12/27/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	100	mg/kg		4		ASA10-3	01/14/20 11:44 / gie

Lab ID: B19122213-003
Client Sample ID: 1912C68-003C, Cell #2S Vadose
Collection Date: 12/24/19 09:05
DateReceived: 12/27/19
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	79	mg/kg		4		ASA10-3	01/14/20 12:06 / gie

Report Definitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

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Gillette, WY 866.686.7175 • Helena, MT 877.472.0711

QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B19122213 **Report Date:** 01/14/20

Analyte	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: ASA10-3									Batch: 140866
Lab ID: LCS-140866	Laboratory Control Sample				Run: ORIONVERSASTARPRO_200				01/14/20 10:45
Alkalinity, 1:2	207	mg/kg	4.0	88	70	130			
Lab ID: B19122213-001A DUP	Sample Duplicate				Run: ORIONVERSASTARPRO_200				01/14/20 11:24
Alkalinity, 1:2	90.5	mg/kg	4.0				0.1	20	

Qualifiers:

RL - Analyte reporting limit.

ND - Not detected at the reporting limit.

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Work Order Receipt Checklist

Hall Environmental

B19122213

Login completed by: Briana G. Sangiuliano
Date Received: 12/27/2019

Reviewed by: BL2000\lcadreau
Received by: slm

Reviewed Date: 12/30/2019
Carrier name: Return-UPS NDA

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☑	No ☐	Not Applicable ☐
Container/Temp Blank temperature:	5.0°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Contact and Corrective Action Comments:

None

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE: 1 OF: 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque NM 87109
TEL 505-345-3975
FAX 505-345-4107
Website www hallenvironmental com

SUBCONTRATOR	Bil-Energy	COMPANY	Energy Laboratories	PHONE	(800) 735-4489	FAX	(406) 252-6069
ADDRESS	1120 South 27th Street			ACCOUNT #		EMAIL	
CITY STATE ZIP	Billings, MT 59107						

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	#CONTAINERS	ANALYTICAL COMMENTS
1	1912C68-001C	Cell #1 Vadose	4OZGU	Soil	12/24/2019 9:25:00 AM	1 ALKALINITY	B191 2213
2	1912C68-002C	Cell #2 N Vadose	4OZGU	Soil	12/24/2019 9:15:00 AM	1 ALKALINITY	
3	1912C68-003C	Cell #2S Vadose	4OZGU	Soil	12/24/2019 9:05:00 AM	1 ALKALINITY	

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports Please e-mail results to lab@hallenvironmental com Please return all coolers and blue ice Thank you

Relinquished By		Date 12/26/2019	Time 10:03 AM	Received By		Date	Time
Relinquished By		Date	Time	Received By		Date	Time
Relinquished By		Date	Time	Received By	Sydney Mcleary	12/27/19	0940

TAT: Standard ✓ RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED

HARD COPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples ° Attempt to Cool ?

Comments

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49542** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **49542** RunNo: **65455**
Prep Date: **12/27/2019** Analysis Date: **12/27/2019** SeqNo: **2248446** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID: **LCS-49542** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **49542** RunNo: **65455**
Prep Date: **12/27/2019** Analysis Date: **12/27/2019** SeqNo: **2248447** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	98.0	90	110			
Chloride	14	1.5	15.00	0	93.3	90	110			
Nitrogen, Nitrite (As N)	2.7	0.30	3.000	0	90.3	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.4	90	110			
Sulfate	28	1.5	30.00	0	95.0	90	110			

Sample ID: **MB-50417** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **50417** RunNo: **66519**
Prep Date: **2/12/2020** Analysis Date: **2/12/2020** SeqNo: **2285869** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-50417** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **50417** RunNo: **66519**
Prep Date: **2/12/2020** Analysis Date: **2/12/2020** SeqNo: **2285870** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.0	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-49555** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **49555** RunNo: **65495**
Prep Date: **12/30/2019** Analysis Date: **12/31/2019** SeqNo: **2250146** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	63.9	124			
Surr: DNOP	4.8		5.000		95.0	70	130			

Sample ID: **MB-49555** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **49555** RunNo: **65495**
Prep Date: **12/30/2019** Analysis Date: **12/31/2019** SeqNo: **2250147** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.4		10.00		94.1	70	130			

Sample ID: **1912C68-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose** Batch ID: **49555** RunNo: **65495**
Prep Date: **12/30/2019** Analysis Date: **12/31/2019** SeqNo: **2250148** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	47	9.7	48.31	2.432	93.1	57	142			
Surr: DNOP	4.2		4.831		87.2	70	130			

Sample ID: **1912C68-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **Cell #1 Vadose** Batch ID: **49555** RunNo: **65495**
Prep Date: **12/30/2019** Analysis Date: **12/31/2019** SeqNo: **2250149** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.6	47.89	2.432	104	57	142	9.56	20	
Surr: DNOP	4.7		4.789		97.7	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49528** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248318** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	820		1000		82.2	66.6	105			

Sample ID: **LCS-49528** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248319** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.4	80	120			
Surr: BFB	870		1000		87.2	66.6	105			

Sample ID: **1912c68-001ams** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Cell #1 Vadose** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248335** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	5.0	24.75	0	99.6	69.1	142			
Surr: BFB	870		990.1		87.7	66.6	105			

Sample ID: **1912c68-001amsd** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **Cell #1 Vadose** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248336** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.58	0	95.0	69.1	142	5.50	20	
Surr: BFB	850		983.3		86.0	66.6	105	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49528** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248345** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		100	80	120			

Sample ID: **LCS-49528** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248346** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	1.000	0	97.3	80	120			
Toluene	0.96	0.050	1.000	0	96.3	80	120			
Ethylbenzene	0.97	0.050	1.000	0	97.0	80	120			
Xylenes, Total	3.0	0.10	3.000	0	98.6	80	120			
Surr: 4-Bromofluorobenzene	0.98		1.000		98.3	80	120			

Sample ID: **1912c68-002ams** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell #2 N Vadose** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248363** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9990	0	100	76	123			
Toluene	1.0	0.050	0.9990	0.009725	100	80.3	127			
Ethylbenzene	1.0	0.050	0.9990	0	101	80.2	131			
Xylenes, Total	3.1	0.10	2.997	0.01513	102	78	133			
Surr: 4-Bromofluorobenzene	0.95		0.9990		95.1	80	120			

Sample ID: **1912c68-002amsd** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**
Client ID: **Cell #2 N Vadose** Batch ID: **49528** RunNo: **65453**
Prep Date: **12/26/2019** Analysis Date: **12/27/2019** SeqNo: **2248364** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	0.9852	0	96.0	76	123	5.53	20	
Toluene	0.95	0.049	0.9852	0.009725	95.4	80.3	127	6.26	20	
Ethylbenzene	0.96	0.049	0.9852	0	97.0	80.2	131	5.44	20	
Xylenes, Total	2.9	0.099	2.956	0.01513	98.2	78	133	5.50	20	
Surr: 4-Bromofluorobenzene	0.96		0.9852		97.4	80	120	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**

14-Feb-20

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49617**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **49617**	RunNo: **65575**
Prep Date: **1/3/2020**	Analysis Date: **1/3/2020**	SeqNo: **2252419** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCSLL-49617**	SampType: **LCSLL**	TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC**	Batch ID: **49617**	RunNo: **65575**
Prep Date: **1/3/2020**	Analysis Date: **1/3/2020**	SeqNo: **2252420** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	122	70	130			

Sample ID: **LCS-49617**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **49617**	RunNo: **65575**
Prep Date: **1/3/2020**	Analysis Date: **1/3/2020**	SeqNo: **2252421** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	101	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65524**
Prep Date: **12/30/2019** Analysis Date: **1/2/2020** SeqNo: **2251057** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	3.0								
Antimony	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Boron	ND	2.0								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Iron	ND	2.5								
Manganese	ND	0.10								
Molybdenum	ND	0.40								
Selenium	ND	2.5								
Silver	ND	0.25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65524**
Prep Date: **12/30/2019** Analysis Date: **1/2/2020** SeqNo: **2251059** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	29	3.0	25.00	0	114	80	120			
Antimony	25	2.5	25.00	0	99.7	80	120			
Barium	25	0.10	25.00	0	98.7	80	120			
Beryllium	25	0.15	25.00	0	101	80	120			
Boron	25	2.0	25.00	0	99.5	80	120			
Cadmium	25	0.10	25.00	0	98.8	80	120			
Chromium	25	0.30	25.00	0	98.8	80	120			
Cobalt	24	0.30	25.00	0	97.7	80	120			
Iron	26	2.5	25.00	0	105	80	120			
Lead	25	0.25	25.00	0	102	80	120			B
Manganese	24	0.10	25.00	0	97.1	80	120			
Molybdenum	25	0.40	25.00	0	99.2	80	120			
Selenium	24	2.5	25.00	0	94.9	80	120			
Silver	5.0	0.25	5.000	0	99.4	80	120			
Uranium	25	5.0	25.00	0	102	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65576**
Prep Date: **12/30/2019** Analysis Date: **1/3/2020** SeqNo: **2252514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	3.0								
Barium	ND	0.10								
Beryllium	ND	0.15								
Boron	ND	2.0								
Cadmium	ND	0.10								
Calcium	ND	25								
Cobalt	ND	0.30								
Copper	ND	0.30								
Magnesium	ND	25								
Nickel	ND	0.50								
Potassium	ND	50								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65576**
Prep Date: **12/30/2019** Analysis Date: **1/3/2020** SeqNo: **2252516** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	28	3.0	25.00	0	114	80	120			
Barium	23	0.10	25.00	0	93.6	80	120			
Beryllium	25	0.15	25.00	0	100	80	120			
Boron	24	2.0	25.00	0	96.3	80	120			
Cadmium	23	0.10	25.00	0	90.6	80	120			
Calcium	2400	25	2500	0	97.1	80	120			
Cobalt	22	0.30	25.00	0	88.9	80	120			
Copper	26	0.30	25.00	0	104	80	120			
Magnesium	2300	25	2500	0	92.8	80	120			
Nickel	23	0.50	25.00	0	91.6	80	120			
Potassium	2400	50	2500	0	94.3	80	120			
Silver	5.0	0.25	5.000	0	101	80	120			
Sodium	2400	25	2500	0	96.0	80	120			
Uranium	25	5.0	25.00	0	102	80	120			

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65576**
Prep Date: **12/30/2019** Analysis Date: **1/3/2020** SeqNo: **2252600** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65576**
Prep Date: **12/30/2019** Analysis Date: **1/3/2020** SeqNo: **2252600** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	ND	0.10								
Iron	ND	2.5								

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65576**
Prep Date: **12/30/2019** Analysis Date: **1/3/2020** SeqNo: **2252602** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	24	0.10	25.00	0	96.0	80	120			
Iron	26	2.5	25.00	0	102	80	120			

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65631**
Prep Date: **12/30/2019** Analysis Date: **1/7/2020** SeqNo: **2254477** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Chromium	ND	0.30								
Molybdenum	ND	0.40								
Zinc	ND	2.5								

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65631**
Prep Date: **12/30/2019** Analysis Date: **1/7/2020** SeqNo: **2254479** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	24	2.5	25.00	0	97.4	80	120			
Chromium	24	0.30	25.00	0	96.4	80	120			
Molybdenum	24	0.40	25.00	0	96.6	80	120			
Zinc	24	2.5	25.00	0	96.0	80	120			

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65673**
Prep Date: **12/30/2019** Analysis Date: **1/9/2020** SeqNo: **2255843** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Selenium	ND	2.5								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1912C68**
14-Feb-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65673**
Prep Date: **12/30/2019** Analysis Date: **1/9/2020** SeqNo: **2255845** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.00	0	93.6	80	120			
Selenium	23	2.5	25.00	0	90.8	80	120			

Sample ID: **MB-49554** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **49554** RunNo: **65673**
Prep Date: **12/30/2019** Analysis Date: **1/9/2020** SeqNo: **2255979** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.25								

Sample ID: **LCS-49554** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **49554** RunNo: **65673**
Prep Date: **12/30/2019** Analysis Date: **1/9/2020** SeqNo: **2255981** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	24	0.25	25.00	0	97.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1912C68 RcptNo: 1

Received By: **Anne Thorne** 12/26/2019 7:55:00 AM

Completed By: **Anne Thorne** 12/26/2019 9:47:23 AM

Reviewed By: 12/26/19

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: _____ (<2 or >12 unless noted)

Adjusted? _____

Checked by: YG 12/26/19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: _____ Date _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr. Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Aqua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 1

Cooler Temp(including CF): 0.8+0.2=1.0 °C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 1912C168	BTEX / MTBE / TMBs (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	WQCC Metals	Major Cations : Anions*
12/24/19	0925	Soil	Cell #1 Vadose	(3) 4oz Glass	Non	001	X	X									X	X
12/24/19	0915	Soil	Cell #2N Vadose	(3) 4oz Glass	Non	002	X	X									X	X
12/24/19	0905	Soil	Cell #2S Vadose	(3) 4oz Glass	Non	003	X	X									X	X
12/24/19	0935	Soil	Cell #1 Treatment	(1) 4oz Glass	Non	004	X	X										
12/24/19	0945	Soil	Cell #2N Treatment	(1) 4oz Glass	Non	005	X	X										
12/24/19	0955	Soil	Cell #2S Treatment	(1) 4oz Glass	Non	006	X	X										

Per Heather add Chloride to -004, -005, -006.

Date:	Time:	Relinquished by:	Received by:	Via:	Date	Time
12/24/19	1440	Heath M. Woods	Christa Waele		12/24/19	1440
12/24/19	1506	Christa Waele			12/26/19	0755

Remarks:
Direct Bill to Aqua Moss
Rates per Andy
*Chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium and sodium

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

April 22, 2020

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX:

RE: Agua Moss Sunco Landfarm OrderNo.: 2003461

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 3/7/2020 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued March 27, 2020.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. All samples are reported as received unless otherwise indicated.

Please don't hesitate to contact HEAL for any additional information or clarifications.

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:44:00 AM
Lab ID: 2003461-001 **Matrix:** SOIL
Received Date: 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Fluoride	4.2	1.5		mg/Kg	5	3/18/2020 9:34:16 AM	51179
Chloride	480	30		mg/Kg	20	3/18/2020 9:46:35 AM	51179
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	3/18/2020 9:34:16 AM	51179
Bromide	6.1	1.5		mg/Kg	5	3/18/2020 9:34:16 AM	51179
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	3/18/2020 9:34:16 AM	51179
Sulfate	1400	30		mg/Kg	20	3/18/2020 9:46:35 AM	51179
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.032		mg/Kg	1	3/17/2020 3:50:46 PM	51155
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Aluminum	8200	290		mg/Kg	100	3/23/2020 11:21:06 AM	51184
Arsenic	ND	4.8		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Barium	260	0.19		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Boron	8.0	3.9		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Cadmium	ND	0.19		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Calcium	140000	2400		mg/Kg	100	3/23/2020 11:21:06 AM	51184
Chromium	3.5	0.58		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Cobalt	2.0	0.58		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Copper	2.8	0.77		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Iron	5300	240		mg/Kg	100	3/23/2020 11:21:06 AM	51184
Lead	ND	0.58		mg/Kg	2	3/23/2020 1:19:19 PM	51184
Magnesium	6100	48		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Manganese	66	0.39		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Molybdenum	ND	0.96		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Nickel	4.1	0.96		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Potassium	900	96		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Selenium	ND	4.8		mg/Kg	2	3/23/2020 1:19:19 PM	51184
Silver	2.4	0.48		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Sodium	840	48		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Uranium	ND	9.6		mg/Kg	2	3/23/2020 11:57:55 AM	51184
Zinc	9.5	4.8		mg/Kg	2	3/23/2020 11:57:55 AM	51184
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	3/14/2020 1:30:46 AM	51067
Surr: BFB	96.6	70-130		%Rec	1	3/14/2020 1:30:46 AM	51067
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	3/13/2020 8:14:49 PM	51069
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	3/13/2020 8:14:49 PM	51069
Surr: DNOP	94.3	55.1-146		%Rec	1	3/13/2020 8:14:49 PM	51069

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #1 Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:44:00 AM
Lab ID: 2003461-001 **Matrix:** SOIL **Received Date:** 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.023		mg/Kg	1	3/14/2020 1:30:46 AM	51067
Toluene	ND	0.046		mg/Kg	1	3/14/2020 1:30:46 AM	51067
Ethylbenzene	ND	0.046		mg/Kg	1	3/14/2020 1:30:46 AM	51067
Xylenes, Total	ND	0.092		mg/Kg	1	3/14/2020 1:30:46 AM	51067
Surr: 1,2-Dichloroethane-d4	88.7	70-130		%Rec	1	3/14/2020 1:30:46 AM	51067
Surr: 4-Bromofluorobenzene	94.6	70-130		%Rec	1	3/14/2020 1:30:46 AM	51067
Surr: Dibromofluoromethane	98.2	70-130		%Rec	1	3/14/2020 1:30:46 AM	51067
Surr: Toluene-d8	103	70-130		%Rec	1	3/14/2020 1:30:46 AM	51067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:33:00 AM
Lab ID: 2003461-002 **Matrix:** SOIL
Received Date: 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Fluoride	6.5	1.5		mg/Kg	5	3/18/2020 9:58:55 AM	51179
Chloride	600	30		mg/Kg	20	3/18/2020 10:11:16 AM	51179
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	3/18/2020 9:58:55 AM	51179
Bromide	2.9	1.5		mg/Kg	5	3/18/2020 9:58:55 AM	51179
Nitrogen, Nitrate (As N)	4.1	1.5		mg/Kg	5	3/18/2020 9:58:55 AM	51179
Sulfate	120	7.5		mg/Kg	5	3/18/2020 9:58:55 AM	51179
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.034		mg/Kg	1	3/17/2020 3:53:17 PM	51155
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Aluminum	14000	300		mg/Kg	100	3/23/2020 11:29:01 AM	51184
Arsenic	ND	4.9		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Barium	720	0.98		mg/Kg	10	3/23/2020 12:26:52 PM	51184
Boron	5.5	3.9		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Cadmium	ND	0.20		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Calcium	45000	250		mg/Kg	10	3/23/2020 12:26:52 PM	51184
Chromium	6.0	0.59		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Cobalt	3.5	0.59		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Copper	5.5	0.79		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Iron	11000	250		mg/Kg	100	3/23/2020 11:29:01 AM	51184
Lead	1.4	0.59		mg/Kg	2	3/23/2020 1:20:34 PM	51184
Magnesium	4900	49		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Manganese	220	0.39		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Molybdenum	ND	0.98		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Nickel	6.0	0.98		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Potassium	1700	98		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Selenium	ND	4.9		mg/Kg	2	3/23/2020 1:20:34 PM	51184
Silver	ND	0.49		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Sodium	550	49		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Uranium	ND	9.8		mg/Kg	2	3/23/2020 11:59:51 AM	51184
Zinc	20	4.9		mg/Kg	2	3/23/2020 11:59:51 AM	51184
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/14/2020 1:59:19 AM	51067
Surr: BFB	97.2	70-130		%Rec	1	3/14/2020 1:59:19 AM	51067
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	3/13/2020 8:23:55 PM	51069
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	3/13/2020 8:23:55 PM	51069
Surr: DNOP	103	55.1-146		%Rec	1	3/13/2020 8:23:55 PM	51069

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 North Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:33:00 AM
Lab ID: 2003461-002 **Matrix:** SOIL **Received Date:** 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	3/14/2020 1:59:19 AM	51067
Toluene	ND	0.048		mg/Kg	1	3/14/2020 1:59:19 AM	51067
Ethylbenzene	ND	0.048		mg/Kg	1	3/14/2020 1:59:19 AM	51067
Xylenes, Total	ND	0.096		mg/Kg	1	3/14/2020 1:59:19 AM	51067
Surr: 1,2-Dichloroethane-d4	85.2	70-130		%Rec	1	3/14/2020 1:59:19 AM	51067
Surr: 4-Bromofluorobenzene	95.1	70-130		%Rec	1	3/14/2020 1:59:19 AM	51067
Surr: Dibromofluoromethane	92.7	70-130		%Rec	1	3/14/2020 1:59:19 AM	51067
Surr: Toluene-d8	103	70-130		%Rec	1	3/14/2020 1:59:19 AM	51067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:38:00 AM
Lab ID: 2003461-003 **Matrix:** SOIL
Received Date: 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **JMT**	
Fluoride	4.9	1.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
Chloride	250	7.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
Bromide	ND	1.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
Sulfate	300	7.5		mg/Kg	5	3/18/2020 10:23:38 AM	51179
EPA METHOD 7471: MERCURY						Analyst: **JLF**	
Mercury	ND	0.033		mg/Kg	1	3/17/2020 3:55:49 PM	51155
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Aluminum	8300	310		mg/Kg	100	3/23/2020 11:30:44 AM	51184
Arsenic	ND	5.1		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Barium	400	0.20		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Boron	ND	4.1		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Cadmium	ND	0.20		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Calcium	38000	250		mg/Kg	10	3/23/2020 12:28:42 PM	51184
Chromium	2.8	0.61		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Cobalt	2.2	0.61		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Copper	3.1	0.81		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Iron	6400	250		mg/Kg	100	3/23/2020 11:30:44 AM	51184
Lead	0.94	0.61		mg/Kg	2	3/23/2020 1:21:48 PM	51184
Magnesium	3900	51		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Manganese	190	0.41		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Molybdenum	ND	1.0		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Nickel	4.5	1.0		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Potassium	690	100		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Selenium	ND	5.1		mg/Kg	2	3/23/2020 1:21:48 PM	51184
Silver	ND	0.51		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Sodium	460	51		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Uranium	ND	10		mg/Kg	2	3/23/2020 12:01:41 PM	51184
Zinc	12	5.1		mg/Kg	2	3/23/2020 12:01:41 PM	51184
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst: **JMR**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	3/14/2020 2:27:52 AM	51067
Surr: BFB	94.9	70-130		%Rec	1	3/14/2020 2:27:52 AM	51067
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	3/13/2020 8:33:14 PM	51069
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	3/13/2020 8:33:14 PM	51069
Surr: DNOP	105	55.1-146		%Rec	1	3/13/2020 8:33:14 PM	51069

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **2003461**
Date Reported: **4/22/2020**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: Cell #2 South Vadose
Project: Agua Moss Sunco Landfarm
Collection Date: 3/6/2020 9:38:00 AM
Lab ID: 2003461-003 **Matrix:** SOIL **Received Date:** 3/7/2020 9:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	3/14/2020 2:27:52 AM	51067
Toluene	ND	0.048		mg/Kg	1	3/14/2020 2:27:52 AM	51067
Ethylbenzene	ND	0.048		mg/Kg	1	3/14/2020 2:27:52 AM	51067
Xylenes, Total	ND	0.096		mg/Kg	1	3/14/2020 2:27:52 AM	51067
Surr: 1,2-Dichloroethane-d4	87.4	70-130		%Rec	1	3/14/2020 2:27:52 AM	51067
Surr: 4-Bromofluorobenzene	94.4	70-130		%Rec	1	3/14/2020 2:27:52 AM	51067
Surr: Dibromofluoromethane	98.0	70-130		%Rec	1	3/14/2020 2:27:52 AM	51067
Surr: Toluene-d8	101	70-130		%Rec	1	3/14/2020 2:27:52 AM	51067

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

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ANALYTICAL SUMMARY REPORT

March 25, 2020

Hall Environmental
4901 Hawkins St NE Ste D
Albuquerque, NM 87109-4372

Work Order: B20031304

Project Name: Not Indicated

Energy Laboratories Inc Billings MT received the following 3 samples for Hall Environmental on 3/18/2020 for analysis.

Lab ID	Client Sample ID	Collect Date	Receive Date	Matrix	Test
B20031304-001	2003461-001B, Cell #1 Vadose	03/06/20 9:44	03/18/20	Soil	Alkalinity, Water Extractable DI Water Soil Extract ASA10-3
B20031304-002	2003461-002B, Cell #2 North Vadose	03/06/20 9:33	03/18/20	Soil	Same As Above
B20031304-003	2003461-003B, Cell #2 South Vadose	03/06/20 9:38	03/18/20	Soil	Same As Above

The analyses presented in this report were performed by Energy Laboratories, Inc., 1120 S 27th St., Billings, MT 59101, unless otherwise noted. Any exceptions or problems with the analyses are noted in the Laboratory Analytical Report, the QA/QC Summary Report, or the Case Narrative. Any issues encountered during sample receipt are documented in the Work Order Receipt Checklist.

The results as reported relate only to the item(s) submitted for testing. This report shall be used or copied only in its entirety. Energy Laboratories, Inc. is not responsible for the consequences arising from the use of a partial report.

If you have any questions regarding these test results, please contact your Project Manager.

Report Approved By:

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LABORATORY ANALYTICAL REPORT

Prepared by Billings, MT Branch

Client: Hall Environmental
Project: Not Indicated
Report Date: 03/25/20

Lab ID: B20031304-001
Client Sample ID: 2003461-001B, Cell #1 Vadose
Collection Date: 03/06/20 09:44
DateReceived: 03/18/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	70	mg/kg		4		ASA10-3	03/24/20 11:52 / gie

Lab ID: B20031304-002
Client Sample ID: 2003461-002B, Cell #2 North Vadose
Collection Date: 03/06/20 09:33
DateReceived: 03/18/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	100	mg/kg		4		ASA10-3	03/24/20 12:17 / gie

Lab ID: B20031304-003
Client Sample ID: 2003461-003B, Cell #2 South Vadose
Collection Date: 03/06/20 09:38
DateReceived: 03/18/20
Matrix: Soil

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
WATER EXTRACTABLE CONSTITUENTS							
Alkalinity, 1:2	92	mg/kg		4		ASA10-3	03/24/20 12:32 / gie

Report Definitions:
RL - Analyte Reporting Limit
QCL - Quality Control Limit
MCL - Maximum Contaminant Level
ND - Not detected at the Reporting Limit (RL)

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QA/QC Summary Report

Prepared by Billings, MT Branch

Client: Hall Environmental **Work Order:** B20031304 **Report Date:** 03/25/20

Analyte	Count	Result	Units	RL	%REC	Low Limit	High Limit	RPD	RPDLimit	Qual
Method: **ASA10-3**										Batch: 143028
Lab ID: **LCS-143028**	Laboratory Control Sample					Run: ORIONVERSASTARPRO_200				03/24/20 11:37
Alkalinity, 1:2		230	mg/kg	4.0	98	70	130			
Lab ID: **B20031304-001A DUP**	Sample Duplicate					Run: ORIONVERSASTARPRO_200				03/24/20 12:05
Alkalinity, 1:2		67.8	mg/kg	4.0				3.8	30	

Qualifiers:

RL - Analyte Reporting Limit

ND - Not detected at the Reporting Limit (RL)

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Work Order Receipt Checklist

Hall Environmental

B20031304

Login completed by: Briana G. Sangiuliano
Date Received: 3/18/2020
Reviewed by: BL2000\gmccartney
Received by: slm
Reviewed Date: 3/19/2020
Carrier name: Return-UPS NDA N/C

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on all shipping container(s)/cooler(s)?	Yes ☐	No ☐	Not Present ☑
Custody seals intact on all sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time? (Exclude analyses that are considered field parameters such as pH, DO, Res Cl, Sulfite, Ferrous Iron, etc.)	Yes ☑	No ☐	
Temp Blank received in all shipping container(s)/cooler(s)?	Yes ☐	No ☑	Not Applicable ☐
Container/Temp Blank temperature:	2.6°C Blue Ice		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	Not Applicable ☑

Standard Reporting Procedures:

Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH, Dissolved Oxygen and Residual Chlorine, are qualified as being analyzed outside of recommended holding time.

Solid/soil samples are reported on a wet weight basis (as received) unless specifically indicated. If moisture corrected, data units are typically noted as –dry. For agricultural and mining soil parameters/characteristics, all samples are dried and ground prior to sample analysis.

Radiochemical precision results represent a 2-sigma Total Measurement Uncertainty.

Contact and Corrective Action Comments:

None

HALL ENVIRONMENTAL ANALYSIS LABORATORY

CHAIN OF CUSTODY RECORD

PAGE 1 OF 1

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque NM 87109
TEL 505-345-3975
FAX 505-345-4107
Website www hallenvironmental com

Received by OCD: 9/8/2020 4:24:06 PM

SUB CONTRATOR	Bil-Energy	COMPANY	Energy Laboratories	PHONE (800) 735-4489	FAX (406) 252-6069
ADDRESS	1120 South 27th Street			ACCOUNT #	EMAIL
CITY STATE ZIP	Billings, MT 59107				

ITEM	SAMPLE	CLIENT SAMPLE ID	BOTTLE TYPE	MATRIX	COLLECTION DATE	# CONTAINERS	ANALYTICAL COMMENTS
1	2003461-001B	Cell #1 Vadose	4OZGU	Soil	3/6/2020 9:44:00 AM	1	Alkalinity B200313O4
2	2003461-002B	Cell #2 North Vadose	4OZGU	Soil	3/6/2020 9:33:00 AM	1	Alkalinity
3	2003461-003B	Cell #2 South Vadose	4OZGU	Soil	3/6/2020 9:38:00 AM	1	Alkalinity

SPECIAL INSTRUCTIONS / COMMENTS:

Please include the LAB ID and the CLIENT SAMPLE ID on all final reports Please e-mail results to lab@hallenvironmental com Please return all coolers and blue ice Thank you

Relinquished By	LB	Date 3/13/2020	Time 8:57 AM	Received By SYDNEY MCCLEARY	Date 3/14/2020	Time 0930
Relinquished By		Date	Time	Received By	Date	Time
Relinquished By		Date	Time	Received By	Date	Time

TAT: Standard RUSH Next BD 2nd BD 3rd BD

REPORT TRANSMITTAL DESIRED

HARDCOPY (extra cost) FAX EMAIL ONLINE

FOR LAB USE ONLY

Temp of samples °C Attempt to Cool ?

Comments

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-51099** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **51099** RunNo: **67280**
Prep Date: **3/13/2020** Analysis Date: **3/13/2020** SeqNo: **2320005** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	ND	1.5								

Sample ID: **LCS-51099** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **51099** RunNo: **67280**
Prep Date: **3/13/2020** Analysis Date: **3/13/2020** SeqNo: **2320006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Chloride	14	1.5	15.00	0	92.9	90	110			

Sample ID: **MB-51179** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **51179** RunNo: **67386**
Prep Date: **3/18/2020** Analysis Date: **3/18/2020** SeqNo: **2325351** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Bromide	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID: **LCS-51179** SampType: **lcs** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **51179** RunNo: **67386**
Prep Date: **3/18/2020** Analysis Date: **3/18/2020** SeqNo: **2325353** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	101	90	110			
Chloride	14	1.5	15.00	0	92.7	90	110			
Nitrogen, Nitrite (As N)	2.7	0.30	3.000	0	91.5	90	110			
Bromide	7.1	0.30	7.500	0	95.2	90	110			
Nitrogen, Nitrate (As N)	7.2	0.30	7.500	0	96.1	90	110			
Sulfate	28	1.5	30.00	0	93.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-51069**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **51069**	RunNo: **67261**
Prep Date: **3/12/2020**	Analysis Date: **3/13/2020**	SeqNo: **2319832** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	105	70	130			
Surr: DNOP	5.2		5.000		104	55.1	146			

Sample ID: **MB-51069**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **51069**	RunNo: **67261**
Prep Date: **3/12/2020**	Analysis Date: **3/13/2020**	SeqNo: **2319834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	10		10.00		99.5	55.1	146			

Sample ID: **LCS-51086**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **51086**	RunNo: **67313**
Prep Date: **3/13/2020**	Analysis Date: **3/16/2020**	SeqNo: **2320643** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	54	10	50.00	0	107	70	130			
Surr: DNOP	5.2		5.000		105	55.1	146			

Sample ID: **MB-51086**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **51086**	RunNo: **67313**
Prep Date: **3/13/2020**	Analysis Date: **3/16/2020**	SeqNo: **2320644** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		109	55.1	146			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **lcs-51068** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319874** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.42		0.5000		84.6	70	130			
Surr: 4-Bromofluorobenzene	0.46		0.5000		91.1	70	130			
Surr: Dibromofluoromethane	0.47		0.5000		93.4	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

Sample ID: **mb-51067** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **51067** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/13/2020** SeqNo: **2319875** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 1,2-Dichloroethane-d4	0.44		0.5000		88.6	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.7	70	130			
Surr: Dibromofluoromethane	0.50		0.5000		100	70	130			
Surr: Toluene-d8	0.51		0.5000		103	70	130			

Sample ID: **mb-51068** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **PBS** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319876** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 1,2-Dichloroethane-d4	0.45		0.5000		90.5	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		93.6	70	130			
Surr: Dibromofluoromethane	0.48		0.5000		95.6	70	130			
Surr: Toluene-d8	0.51		0.5000		102	70	130			

Sample ID: **lcs-51067** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles Short List**
Client ID: **LCSS** Batch ID: **51067** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/13/2020** SeqNo: **2320114** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	102	70	130			
Toluene	1.0	0.050	1.000	0	105	70	130			
Surr: 1,2-Dichloroethane-d4	0.43		0.5000		85.6	70	130			
Surr: 4-Bromofluorobenzene	0.47		0.5000		94.6	70	130			
Surr: Dibromofluoromethane	0.45		0.5000		90.4	70	130			
Surr: Toluene-d8	0.50		0.5000		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**

22-Apr-20

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-51155**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **51155**	RunNo: **67360**
Prep Date: **3/17/2020**	Analysis Date: **3/17/2020**	SeqNo: **2321939** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LLLCS-51155**	SampType: **LCSLL**	TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC**	Batch ID: **51155**	RunNo: **67360**
Prep Date: **3/17/2020**	Analysis Date: **3/17/2020**	SeqNo: **2321940** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	76.1	70	130			

Sample ID: **LCS-51155**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **51155**	RunNo: **67360**
Prep Date: **3/17/2020**	Analysis Date: **3/17/2020**	SeqNo: **2321941** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.14	0.033	0.1667	0	83.0	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-51184** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **51184** RunNo: **67499**
Prep Date: **3/18/2020** Analysis Date: **3/23/2020** SeqNo: **2329484** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	ND	3.0								
Arsenic	ND	2.5								
Barium	ND	0.10								
Boron	ND	2.0								
Cadmium	ND	0.10								
Calcium	ND	25								
Chromium	ND	0.30								
Cobalt	ND	0.30								
Copper	ND	0.40								
Iron	ND	2.5								
Magnesium	ND	25								
Manganese	ND	0.20								
Molybdenum	ND	0.50								
Nickel	ND	0.50								
Potassium	ND	50								
Selenium	ND	2.5								
Silver	ND	0.25								
Sodium	ND	25								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID: **LCS-51184** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **51184** RunNo: **67499**
Prep Date: **3/18/2020** Analysis Date: **3/23/2020** SeqNo: **2329488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aluminum	28	3.0	25.00	0	113	80	120			
Arsenic	23	2.5	25.00	0	92.4	80	120			
Barium	24	0.10	25.00	0	96.6	80	120			
Boron	24	2.0	25.00	0	94.8	80	120			
Cadmium	24	0.10	25.00	0	95.9	80	120			
Calcium	2500	25	2500	0	102	80	120			
Chromium	24	0.30	25.00	0	95.3	80	120			
Cobalt	24	0.30	25.00	0	94.3	80	120			
Copper	25	0.40	25.00	0	101	80	120			
Iron	26	2.5	25.00	0	104	80	120			
Magnesium	2500	25	2500	0	100	80	120			
Manganese	24	0.20	25.00	0	96.3	80	120			
Molybdenum	24	0.50	25.00	0	94.1	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-51184** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **51184** RunNo: **67499**
Prep Date: **3/18/2020** Analysis Date: **3/23/2020** SeqNo: **2329488** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Nickel	24	0.50	25.00	0	94.7	80	120			
Potassium	2400	50	2500	0	97.9	80	120			
Selenium	24	2.5	25.00	0	94.4	80	120			
Silver	4.6	0.25	5.000	0	92.2	80	120			
Sodium	2500	25	2500	0	99.0	80	120			
Uranium	25	5.0	25.00	0	99.0	80	120			
Zinc	23	2.5	25.00	0	93.9	80	120			

Sample ID: **MB-51184** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **51184** RunNo: **67499**
Prep Date: **3/18/2020** Analysis Date: **3/23/2020** SeqNo: **2329545** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	ND	0.30								
Selenium	ND	2.5								

Sample ID: **LCS-51184** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **51184** RunNo: **67499**
Prep Date: **3/18/2020** Analysis Date: **3/23/2020** SeqNo: **2329546** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	25	0.30	25.00	0	100	80	120			
Selenium	24	2.5	25.00	0	97.8	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **2003461-006ams** SampType: **MS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **Cell #2S Treatment** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319899** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	4.9	24.27	0	97.0	70	130			
Surr: BFB	470		485.4		96.5	70	130			

Sample ID: **2003461-006amsd** SampType: **MSD** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **Cell #2S Treatment** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319900** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	4.9	24.65	0	91.4	70	130	4.42	20	
Surr: BFB	480		493.1		97.7	70	130	0	0	

Sample ID: **lcs-51067** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **51067** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/13/2020** SeqNo: **2319912** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	89.8	70	130			
Surr: BFB	490		500.0		98.5	70	130			

Sample ID: **lcs-51068** SampType: **LCS** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **LCSS** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319913** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	90.0	70	130			
Surr: BFB	490		500.0		97.8	70	130			

Sample ID: **mb-51067** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **51067** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/13/2020** SeqNo: **2319914** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	490		500.0		97.1	70	130			

Sample ID: **mb-51068** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319915** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **2003461**
22-Apr-20

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **mb-51068** SampType: **MBLK** TestCode: **EPA Method 8015D Mod: Gasoline Range**
Client ID: **PBS** Batch ID: **51068** RunNo: **67303**
Prep Date: **3/12/2020** Analysis Date: **3/14/2020** SeqNo: **2319915** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	480		500.0		96.3	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **2003461** RcptNo: **1**

Received By: **Erin Melendrez** **3/7/2020 9:30:00 AM**

Completed By: **Leah Baca** **3/11/2020 10:15:53 AM**

Reviewed By: ENM 3/11/20

Chain of Custody

1. Is Chain of Custody sufficiently complete? Yes ☑ No ☐ Not Present ☐
2. How was the sample delivered? Courier

Log In

3. Was an attempt made to cool the samples? Yes ☑ No ☐ NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C Yes ☑ No ☐ NA ☐
5. Sample(s) in proper container(s)? Yes ☑ No ☐
6. Sufficient sample volume for indicated test(s)? Yes ☑ No ☐
7. Are samples (except VOA and ONG) properly preserved? Yes ☑ No ☐
8. Was preservative added to bottles? Yes ☐ No ☑ NA ☐
9. Received at least 1 vial with headspace <1/4" for AQ VOA? Yes ☐ No ☐ NA ☑
10. Were any sample containers received broken? Yes ☐ No ☑
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody) Yes ☑ No ☐
12. Are matrices correctly identified on Chain of Custody? Yes ☑ No ☐
13. Is it clear what analyses were requested? Yes ☑ No ☐
14. Were all holding times able to be met? (If no, notify customer for authorization.) Yes ☑ No ☐

# of preserved bottles checked for pH: (<2 or >12 unless noted)
Adjusted?
Checked by: DAD 3/11/20

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date:
By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:
Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.0	Good				
2	4.7	Good				

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation: ☐ Az Compliance
☐ NELAC ☐ Other

☐ EDD (Type)

Turn-Around Time:
☒ Standard ☐ Rush

Project Name: Agua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

# of Coolers: 2

Cooler Temp(including CF): 4.1-0.1(CF)=4.0°C
4.8-0.1(CF)=4.7°C

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request

Date	Time	Matrix	Sample Name	Container Type and #	Preservative Type	HEAL No. 2003461	BTEX / MTBE / TMB's (8021)	TPH:8015D(GRO / DRO / MRO)	8081 Pesticides/8082 PCB's	EDB (Method 504.1)	PAHs by 8310 or 8270SIMS	RCRA 8 Metals	Cl, F, Br, NO_3, NO_2, PO_4, SO_4 300.0 Cl	8260 (VOA)	8270 (Semi-VOA)	Total Coliform (Present/Absent)	WQCC Metals	Major Cations / Anions*
3/16/20	0944	Soil	Cell #1 Vadose	(2) 4oz Glass	Non	-001	X	X					X				X	X
3/16/20	0933	Soil	Cell #2N Vadose	(2) 4oz Glass	Non	-002	X	X					X				X	X
3/16/20	0938	Soil	Cell #2S Vadose	(2) 4oz Glass	Non	-003	X	X					X				X	X
3/16/20	1034	Soil	Cell #1 Treatment	(1) 4oz Glass	Non	-004		X					X					
3/16/20	1024	Soil	Cell #2N Treatment	(1) 4oz Glass	Non	-005		X					X					
3/16/20	1029	Soil	Cell #2S Treatment	(1) 4oz Glass	Non	-006		X					X					

Date	Time	Relinquished by:	Received by:	Via:	Date	Time
3/16/20	1740	Heath M. Woods	Christian Waeta		3/16/20	1740
3/16/20	1814	Christian Waeta		Courier	3/17/20	0930

Remarks: Direct Bill to Agua Moss - Rates per Andy
* Chloride, fluoride, bicarbonate, sulfate, nitrate, nitrite, calcium, magnesium, potassium, and sodium.

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:24:06 PM

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

August 07, 2019

Heather Woods
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 325-1055
FAX

RE: Agua Moss Sunco Landfarm OrderNo.: 1907197

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 12 sample(s) on 7/3/2019 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to www.hallenvironmental.com or the state specific web sites. In order to properly interpret your results, it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0901

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:37:00 PM
Lab ID: 1907197-001 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	5.4	1.5		mg/Kg	5	7/16/2019 3:59:16 PM	46203
Chloride	490	30		mg/Kg	20	7/16/2019 4:11:40 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 3:59:16 PM	46203
Nitrogen, Nitrate (As N)	2.5	1.5		mg/Kg	5	7/16/2019 3:59:16 PM	46203
Sulfate	1700	30		mg/Kg	20	7/16/2019 4:11:40 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 4:43:04 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	5.0		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Arsenic	ND	5.0		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Barium	160	0.20		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Beryllium	0.48	0.30		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Chromium	5.0	0.60		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Copper	4.4	0.60		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Iron	7800	250		mg/Kg	100	7/8/2019 8:12:04 AM	46034
Lead	2.5	0.50		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Manganese	120	0.20		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Selenium	ND	5.0		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Silver	ND	0.50		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Thallium	ND	5.0		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Uranium	ND	10		mg/Kg	2	7/8/2019 8:55:03 AM	46034
Zinc	19	5.0		mg/Kg	2	7/8/2019 8:55:03 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.10		µg/Kg	1	7/9/2019 3:13:17 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 9:27:22 PM	46092
Surr: Decachlorobiphenyl	60.0	25.7-135		%Rec	1	7/16/2019 9:27:22 PM	46092
Surr: Tetrachloro-m-xylene	62.8	32.3-138		%Rec	1	7/16/2019 9:27:22 PM	46092
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/11/2019 8:47:08 AM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:37:00 PM
Lab ID: 1907197-001 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 8:47:08 AM	46050
Surr: DNOP	104	70-130		%Rec	1	7/11/2019 8:47:08 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 9:47:22 AM	46033
Surr: BFB	106	73.8-119		%Rec	1	7/7/2019 9:47:22 AM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.23		mg/Kg	1	7/19/2019 12:17:15 PM	46114
1-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 12:17:15 PM	46114
2-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 12:17:15 PM	46114
Benzo(a)pyrene	ND	0.0091		mg/Kg	1	7/19/2019 12:17:15 PM	46114
Surr: Benzo(e)pyrene	44.2	26.5-113		%Rec	1	7/19/2019 12:17:15 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Naphthalene	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 2:06:11 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Acetone	ND	0.74		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 2:06:11 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Chloroethane	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 2:06:11 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:37:00 PM
Lab ID: 1907197-001 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
2,2-Dichloropropane	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1-Dichloropropene	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Hexachlorobutadiene	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 2:06:11 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 2:06:11 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2,3-Trichlorobenzene	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
1,2,3-Trichloropropane	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 2:06:11 PM	46033
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2019 2:06:11 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:37:00 PM
Lab ID: 1907197-001 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	84.6	70-130		%Rec	1	7/10/2019 2:06:11 PM	46033
Surr: 1,2-Dichloroethane-d4	82.1	70-130		%Rec	1	7/10/2019 2:06:11 PM	46033
Surr: Toluene-d8	94.2	70-130		%Rec	1	7/10/2019 2:06:11 PM	46033
Surr: 4-Bromofluorobenzene	98.8	70-130		%Rec	1	7/10/2019 2:06:11 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	7.94			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:45:00 PM
Lab ID: 1907197-002 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst:	**MRA**
Fluoride	8.0	1.5		mg/Kg	5	7/16/2019 5:13:43 PM	46203
Chloride	1900	75		mg/Kg	50	7/17/2019 5:21:26 PM	46203
Nitrogen, Nitrite (As N)	1.7	1.5		mg/Kg	5	7/16/2019 5:13:43 PM	46203
Nitrogen, Nitrate (As N)	17	1.5		mg/Kg	5	7/16/2019 5:13:43 PM	46203
Sulfate	810	30		mg/Kg	20	7/16/2019 5:26:08 PM	46203
EPA METHOD 7471: MERCURY						Analyst:	**rde**
Mercury	ND	0.032		mg/Kg	1	7/17/2019 4:49:05 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst:	**ELS**
Antimony	ND	5.0		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Arsenic	ND	5.0		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Barium	300	0.20		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Beryllium	0.41	0.30		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Chromium	3.6	0.60		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Copper	4.3	0.60		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Iron	5100	250		mg/Kg	100	7/8/2019 8:13:42 AM	46034
Lead	ND	0.50		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Manganese	57	0.20		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Selenium	8.5	5.0		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Silver	1.5	0.50		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Thallium	ND	5.0		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Uranium	ND	10		mg/Kg	2	7/8/2019 8:56:49 AM	46034
Zinc	12	5.0		mg/Kg	2	7/8/2019 8:56:49 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst:	**CLP**
1,2-Dibromoethane	ND	0.095		µg/Kg	1	7/9/2019 3:58:33 PM	46062
EPA METHOD 8082A: PCB'S						Analyst:	**TOM**
Aroclor 1016	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1221	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1232	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1242	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1248	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1254	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Aroclor 1260	ND	0.025		mg/Kg	1	7/16/2019 11:06:29 PM	46092
Surr: Decachlorobiphenyl	72.0	25.7-135		%Rec	1	7/16/2019 11:06:29 PM	46092
Surr: Tetrachloro-m-xylene	72.8	32.3-138		%Rec	1	7/16/2019 11:06:29 PM	46092
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst:	**BRM**
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	7/11/2019 10:00:29 AM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:45:00 PM
Lab ID: 1907197-002 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/11/2019 10:00:29 AM	46050
Surr: DNOP	118	70-130		%Rec	1	7/11/2019 10:00:29 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/7/2019 10:57:26 AM	46033
Surr: BFB	103	73.8-119		%Rec	1	7/7/2019 10:57:26 AM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.23		mg/Kg	1	7/19/2019 1:21:00 PM	46114
1-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 1:21:00 PM	46114
2-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 1:21:00 PM	46114
Benzo(a)pyrene	ND	0.0093		mg/Kg	1	7/19/2019 1:21:00 PM	46114
Surr: Benzo(e)pyrene	59.0	26.5-113		%Rec	1	7/19/2019 1:21:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Toluene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Ethylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2,4-Trimethylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,3,5-Trimethylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2-Dichloroethane (EDC)	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2-Dibromoethane (EDB)	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Naphthalene	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 3:32:18 PM	46033
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Acetone	ND	0.73		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Bromobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Bromodichloromethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Bromoform	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 3:32:18 PM	46033
2-Butanone	ND	0.48		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Carbon disulfide	ND	0.48		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Carbon tetrachloride	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Chlorobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Chloroethane	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Chloroform	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 3:32:18 PM	46033
2-Chlorotoluene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
4-Chlorotoluene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
cis-1,2-DCE	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:45:00 PM
Lab ID: 1907197-002 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Dibromochloromethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Dibromomethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2-Dichlorobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,3-Dichlorobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,4-Dichlorobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Dichlorodifluoromethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1-Dichloroethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1-Dichloroethene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2-Dichloropropane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,3-Dichloropropane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
2,2-Dichloropropane	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1-Dichloropropene	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Hexachlorobutadiene	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
2-Hexanone	ND	0.48		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Isopropylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
4-Isopropyltoluene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
4-Methyl-2-pentanone	ND	0.48		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 3:32:18 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 3:32:18 PM	46033
n-Propylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
sec-Butylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Styrene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
tert-Butylbenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Tetrachloroethene (PCE)	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
trans-1,2-DCE	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
trans-1,3-Dichloropropene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2,3-Trichlorobenzene	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2,4-Trichlorobenzene	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1,1-Trichloroethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,1,2-Trichloroethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Trichloroethene (TCE)	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Trichlorofluoromethane	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
1,2,3-Trichloropropane	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Vinyl chloride	ND	0.048		mg/Kg	1	7/10/2019 3:32:18 PM	46033
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2019 3:32:18 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:45:00 PM
Lab ID: 1907197-002 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	84.7	70-130		%Rec	1	7/10/2019 3:32:18 PM	46033
Surr: 1,2-Dichloroethane-d4	79.6	70-130		%Rec	1	7/10/2019 3:32:18 PM	46033
Surr: Toluene-d8	95.4	70-130		%Rec	1	7/10/2019 3:32:18 PM	46033
Surr: 4-Bromofluorobenzene	94.7	70-130		%Rec	1	7/10/2019 3:32:18 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.06			pH Units	1	7/17/2019 12:09:00 PM	R61445

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Qualifiers:

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:55:00 PM
Lab ID: 1907197-003 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	4.3	1.5		mg/Kg	5	7/16/2019 5:38:32 PM	46203
Chloride	700	30		mg/Kg	20	7/16/2019 5:50:56 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 5:38:32 PM	46203
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 5:38:32 PM	46203
Sulfate	700	30		mg/Kg	20	7/16/2019 5:50:56 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.033		mg/Kg	1	7/17/2019 4:51:05 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Arsenic	ND	4.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Barium	770	0.49		mg/Kg	5	7/8/2019 9:28:06 AM	46034
Beryllium	0.36	0.30		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Chromium	3.4	0.59		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Copper	2.8	0.59		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Iron	5300	250		mg/Kg	100	7/8/2019 8:15:39 AM	46034
Lead	1.2	0.49		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Manganese	79	0.20		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Selenium	ND	4.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Silver	0.55	0.49		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Thallium	ND	4.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Uranium	ND	9.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
Zinc	12	4.9		mg/Kg	2	7/8/2019 8:58:36 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.094		µg/Kg	1	7/9/2019 4:13:47 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 11:39:32 PM	46092
Surr: Decachlorobiphenyl	62.8	25.7-135		%Rec	1	7/16/2019 11:39:32 PM	46092
Surr: Tetrachloro-m-xylene	64.8	32.3-138		%Rec	1	7/16/2019 11:39:32 PM	46092
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/11/2019 10:25:09 AM	46050

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H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:55:00 PM
Lab ID: 1907197-003 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 10:25:09 AM	46050
Surr: DNOP	98.7	70-130		%Rec	1	7/11/2019 10:25:09 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 11:20:05 AM	46033
Surr: BFB	100	73.8-119		%Rec	1	7/7/2019 11:20:05 AM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.24		mg/Kg	1	7/19/2019 1:47:00 PM	46114
1-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 1:47:00 PM	46114
2-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 1:47:00 PM	46114
Benzo(a)pyrene	ND	0.0095		mg/Kg	1	7/19/2019 1:47:00 PM	46114
Surr: Benzo(e)pyrene	60.1	26.5-113		%Rec	1	7/19/2019 1:47:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Naphthalene	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:01:00 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Acetone	ND	0.73		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 4:01:00 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Chloroethane	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 4:01:00 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:55:00 PM
Lab ID: 1907197-003 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
2,2-Dichloropropane	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1-Dichloropropene	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Hexachlorobutadiene	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 4:01:00 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 4:01:00 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2,3-Trichlorobenzene	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
1,2,3-Trichloropropane	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 4:01:00 PM	46033
Xylenes, Total	ND	0.098		mg/Kg	1	7/10/2019 4:01:00 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:55:00 PM
Lab ID: 1907197-003 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	85.1	70-130		%Rec	1	7/10/2019 4:01:00 PM	46033
Surr: 1,2-Dichloroethane-d4	78.1	70-130		%Rec	1	7/10/2019 4:01:00 PM	46033
Surr: Toluene-d8	96.0	70-130		%Rec	1	7/10/2019 4:01:00 PM	46033
Surr: 4-Bromofluorobenzene	102	70-130		%Rec	1	7/10/2019 4:01:00 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.39			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 6:05:00 PM
Lab ID: 1907197-004 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	3.0	1.5		mg/Kg	5	7/16/2019 6:03:21 PM	46203
Chloride	280	7.5		mg/Kg	5	7/16/2019 6:03:21 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 6:03:21 PM	46203
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 6:03:21 PM	46203
Sulfate	470	7.5		mg/Kg	5	7/16/2019 6:03:21 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 4:53:07 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.8		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Arsenic	5.5	4.8		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Barium	170	0.19		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Beryllium	0.42	0.29		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Cadmium	ND	0.19		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Chromium	3.3	0.58		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Copper	2.9	0.58		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Iron	6500	240		mg/Kg	100	7/8/2019 8:17:24 AM	46034
Lead	1.6	0.48		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Manganese	160	0.19		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Selenium	ND	4.8		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Silver	ND	0.48		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Thallium	ND	4.8		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Uranium	ND	9.6		mg/Kg	2	7/8/2019 9:00:22 AM	46034
Zinc	15	4.8		mg/Kg	2	7/8/2019 9:00:22 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.092		µg/Kg	1	7/9/2019 4:28:51 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1221	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1232	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1242	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1248	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1254	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Aroclor 1260	ND	0.025		mg/Kg	1	7/16/2019 1:32:57 PM	46147
Surr: Decachlorobiphenyl	64.4	25.7-135		%Rec	1	7/16/2019 1:32:57 PM	46147
Surr: Tetrachloro-m-xylene	62.0	32.3-138		%Rec	1	7/16/2019 1:32:57 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/11/2019 10:49:44 AM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 6:05:00 PM
Lab ID: 1907197-004 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 10:49:44 AM	46050
Surr: DNOP	108	70-130		%Rec	1	7/11/2019 10:49:44 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/7/2019 11:42:47 AM	46033
Surr: BFB	101	73.8-119		%Rec	1	7/7/2019 11:42:47 AM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.25		mg/Kg	1	7/19/2019 2:12:00 PM	46114
1-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 2:12:00 PM	46114
2-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 2:12:00 PM	46114
Benzo(a)pyrene	ND	0.010		mg/Kg	1	7/19/2019 2:12:00 PM	46114
Surr: Benzo(e)pyrene	67.5	26.5-113		%Rec	1	7/19/2019 2:12:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Toluene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Ethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Naphthalene	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:29:47 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Acetone	ND	0.74		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Bromobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Bromodichloromethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Bromoform	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 4:29:47 PM	46033
2-Butanone	ND	0.50		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Carbon disulfide	ND	0.50		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Carbon tetrachloride	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Chlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Chloroethane	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Chloroform	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 4:29:47 PM	46033
2-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
4-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
cis-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 6:05:00 PM
Lab ID: 1907197-004 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Dibromochloromethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Dibromomethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1-Dichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1-Dichloroethene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,3-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
2,2-Dichloropropane	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1-Dichloropropene	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Hexachlorobutadiene	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
2-Hexanone	ND	0.50		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Isopropylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
4-Isopropyltoluene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 4:29:47 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 4:29:47 PM	46033
n-Propylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
sec-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Styrene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
tert-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
trans-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2,3-Trichlorobenzene	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Trichlorofluoromethane	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
1,2,3-Trichloropropane	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Vinyl chloride	ND	0.050		mg/Kg	1	7/10/2019 4:29:47 PM	46033
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2019 4:29:47 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C1V-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 6:05:00 PM
Lab ID: 1907197-004 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	86.5	70-130		%Rec	1	7/10/2019 4:29:47 PM	46033
Surr: 1,2-Dichloroethane-d4	79.7	70-130		%Rec	1	7/10/2019 4:29:47 PM	46033
Surr: Toluene-d8	93.2	70-130		%Rec	1	7/10/2019 4:29:47 PM	46033
Surr: 4-Bromofluorobenzene	97.3	70-130		%Rec	1	7/10/2019 4:29:47 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.66			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:56:00 PM
Lab ID: 1907197-005 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	2.3	1.5		mg/Kg	5	7/16/2019 6:28:10 PM	46203
Chloride	370	30		mg/Kg	20	7/16/2019 6:40:34 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 6:28:10 PM	46203
Nitrogen, Nitrate (As N)	19	1.5		mg/Kg	5	7/16/2019 6:28:10 PM	46203
Sulfate	320	7.5		mg/Kg	5	7/16/2019 6:28:10 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	0.065	0.032		mg/Kg	1	7/17/2019 4:55:09 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	5.0		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Arsenic	ND	5.0		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Barium	410	0.20		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Beryllium	0.88	0.30		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Chromium	11	0.60		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Copper	10	0.60		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Iron	18000	250		mg/Kg	100	7/8/2019 8:26:54 AM	46034
Lead	4.0	0.50		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Manganese	330	0.20		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Selenium	ND	5.0		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Silver	ND	0.50		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Thallium	ND	5.0		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Uranium	ND	9.9		mg/Kg	2	7/8/2019 9:02:08 AM	46034
Zinc	41	5.0		mg/Kg	2	7/8/2019 9:02:08 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.095		µg/Kg	1	7/9/2019 4:43:59 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 3:24:03 PM	46147
Surr: Decachlorobiphenyl	57.2	25.7-135		%Rec	1	7/16/2019 3:24:03 PM	46147
Surr: Tetrachloro-m-xylene	57.6	32.3-138		%Rec	1	7/16/2019 3:24:03 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/11/2019 11:14:22 AM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:56:00 PM
Lab ID: 1907197-005 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/11/2019 11:14:22 AM	46050
Surr: DNOP	109	70-130		%Rec	1	7/11/2019 11:14:22 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/7/2019 12:05:29 PM	46033
Surr: BFB	103	73.8-119		%Rec	1	7/7/2019 12:05:29 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.23		mg/Kg	1	7/19/2019 2:38:00 PM	46114
1-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 2:38:00 PM	46114
2-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 2:38:00 PM	46114
Benzo(a)pyrene	ND	0.0093		mg/Kg	1	7/19/2019 2:38:00 PM	46114
Surr: Benzo(e)pyrene	58.5	26.5-113		%Rec	1	7/19/2019 2:38:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Toluene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Ethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Naphthalene	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:58:33 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Acetone	ND	0.75		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Bromobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Bromodichloromethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Bromoform	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 4:58:33 PM	46033
2-Butanone	ND	0.50		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Carbon disulfide	ND	0.50		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Carbon tetrachloride	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Chlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Chloroethane	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Chloroform	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 4:58:33 PM	46033
2-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
4-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
cis-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:56:00 PM
Lab ID: 1907197-005 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Dibromochloromethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Dibromomethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1-Dichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1-Dichloroethene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,3-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
2,2-Dichloropropane	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1-Dichloropropene	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Hexachlorobutadiene	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
2-Hexanone	ND	0.50		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Isopropylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
4-Isopropyltoluene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 4:58:33 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 4:58:33 PM	46033
n-Propylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
sec-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Styrene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
tert-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
trans-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Trichlorofluoromethane	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Vinyl chloride	ND	0.050		mg/Kg	1	7/10/2019 4:58:33 PM	46033
Xylenes, Total	ND	0.10		mg/Kg	1	7/10/2019 4:58:33 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:56:00 PM
Lab ID: 1907197-005 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	87.0	70-130		%Rec	1	7/10/2019 4:58:33 PM	46033
Surr: 1,2-Dichloroethane-d4	81.5	70-130		%Rec	1	7/10/2019 4:58:33 PM	46033
Surr: Toluene-d8	92.1	70-130		%Rec	1	7/10/2019 4:58:33 PM	46033
Surr: 4-Bromofluorobenzene	94.2	70-130		%Rec	1	7/10/2019 4:58:33 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.16			pH Units	1	7/17/2019 12:09:00 PM	R61445

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:06:00 PM
Lab ID: 1907197-006 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	3.4	1.5		mg/Kg	5	7/16/2019 7:17:48 PM	46203
Chloride	1200	75		mg/Kg	50	7/17/2019 5:33:51 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 7:17:48 PM	46203
Nitrogen, Nitrate (As N)	2.8	1.5		mg/Kg	5	7/16/2019 7:17:48 PM	46203
Sulfate	120	7.5		mg/Kg	5	7/16/2019 7:17:48 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 5:01:22 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.8		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Arsenic	ND	4.8		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Barium	290	0.19		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Beryllium	0.67	0.29		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Cadmium	ND	0.19		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Chromium	8.3	0.58		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Copper	6.6	0.58		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Iron	14000	240		mg/Kg	100	7/8/2019 8:28:33 AM	46034
Lead	4.0	0.48		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Manganese	250	0.19		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Selenium	ND	4.8		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Silver	ND	0.48		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Thallium	ND	4.8		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Uranium	ND	9.7		mg/Kg	2	7/8/2019 9:03:53 AM	46034
Zinc	32	4.8		mg/Kg	2	7/8/2019 9:03:53 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.095		µg/Kg	1	7/9/2019 4:59:07 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1221	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1232	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1242	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1248	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1254	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Aroclor 1260	ND	0.025		mg/Kg	1	7/16/2019 3:57:05 PM	46147
Surr: Decachlorobiphenyl	55.6	25.7-135		%Rec	1	7/16/2019 3:57:05 PM	46147
Surr: Tetrachloro-m-xylene	54.8	32.3-138		%Rec	1	7/16/2019 3:57:05 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/11/2019 11:38:57 AM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:06:00 PM
Lab ID: 1907197-006 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/11/2019 11:38:57 AM	46050
Surr: DNOP	108	70-130		%Rec	1	7/11/2019 11:38:57 AM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 12:28:09 PM	46033
Surr: BFB	102	73.8-119		%Rec	1	7/7/2019 12:28:09 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:03:00 PM	46114
1-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:03:00 PM	46114
2-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:03:00 PM	46114
Benzo(a)pyrene	ND	0.0098		mg/Kg	1	7/19/2019 3:03:00 PM	46114
Surr: Benzo(e)pyrene	65.4	26.5-113		%Rec	1	7/19/2019 3:03:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Naphthalene	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 5:27:19 PM	46033
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Acetone	ND	0.73		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 5:27:19 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Chloroethane	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 5:27:19 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:06:00 PM
Lab ID: 1907197-006 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
2,2-Dichloropropane	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1-Dichloropropene	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Hexachlorobutadiene	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 5:27:19 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 5:27:19 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2,3-Trichlorobenzene	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
1,2,3-Trichloropropane	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 5:27:19 PM	46033
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2019 5:27:19 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:06:00 PM
Lab ID: 1907197-006 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	87.6	70-130		%Rec	1	7/10/2019 5:27:19 PM	46033
Surr: 1,2-Dichloroethane-d4	79.9	70-130		%Rec	1	7/10/2019 5:27:19 PM	46033
Surr: Toluene-d8	93.6	70-130		%Rec	1	7/10/2019 5:27:19 PM	46033
Surr: 4-Bromofluorobenzene	98.9	70-130		%Rec	1	7/10/2019 5:27:19 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	7.95			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:14:00 PM
Lab ID: 1907197-007 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	1.8	1.5		mg/Kg	5	7/16/2019 7:42:37 PM	46203
Chloride	500	30		mg/Kg	20	7/16/2019 7:55:01 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 7:42:37 PM	46203
Nitrogen, Nitrate (As N)	14	1.5		mg/Kg	5	7/16/2019 7:42:37 PM	46203
Sulfate	250	7.5		mg/Kg	5	7/16/2019 7:42:37 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.031		mg/Kg	1	7/17/2019 5:03:25 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.8		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Arsenic	ND	4.8		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Barium	310	0.19		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Beryllium	0.69	0.29		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Cadmium	ND	0.19		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Chromium	8.8	0.58		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Copper	7.3	0.58		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Iron	14000	240		mg/Kg	100	7/8/2019 8:30:12 AM	46034
Lead	4.6	0.48		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Manganese	240	0.19		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Selenium	ND	4.8		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Silver	ND	0.48		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Thallium	ND	4.8		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Uranium	ND	9.6		mg/Kg	2	7/8/2019 9:11:57 AM	46034
Zinc	31	4.8		mg/Kg	2	7/8/2019 9:11:57 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.097		µg/Kg	1	7/9/2019 5:29:36 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 4:30:07 PM	46147
Surr: Decachlorobiphenyl	52.0	25.7-135		%Rec	1	7/16/2019 4:30:07 PM	46147
Surr: Tetrachloro-m-xylene	52.0	32.3-138		%Rec	1	7/16/2019 4:30:07 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/11/2019 12:03:48 PM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:14:00 PM
Lab ID: 1907197-007 **Matrix:** SOIL
Received Date: 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 12:03:48 PM	46050
Surr: DNOP	108	70-130		%Rec	1	7/11/2019 12:03:48 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 12:50:51 PM	46033
Surr: BFB	98.7	73.8-119		%Rec	1	7/7/2019 12:50:51 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:29:00 PM	46114
1-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:29:00 PM	46114
2-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:29:00 PM	46114
Benzo(a)pyrene	ND	0.0099		mg/Kg	1	7/19/2019 3:29:00 PM	46114
Surr: Benzo(e)pyrene	82.5	26.5-113		%Rec	1	7/19/2019 3:29:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Naphthalene	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 5:56:05 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Acetone	ND	0.74		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 5:56:05 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Chloroethane	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 5:56:05 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:14:00 PM
Lab ID: 1907197-007 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
2,2-Dichloropropane	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1-Dichloropropene	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Hexachlorobutadiene	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 5:56:05 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 5:56:05 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2,3-Trichlorobenzene	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
1,2,3-Trichloropropane	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 5:56:05 PM	46033
Xylenes, Total	ND	0.098		mg/Kg	1	7/10/2019 5:56:05 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:14:00 PM
Lab ID: 1907197-007 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	84.9	70-130		%Rec	1	7/10/2019 5:56:05 PM	46033
Surr: 1,2-Dichloroethane-d4	78.3	70-130		%Rec	1	7/10/2019 5:56:05 PM	46033
Surr: Toluene-d8	94.5	70-130		%Rec	1	7/10/2019 5:56:05 PM	46033
Surr: 4-Bromofluorobenzene	96.7	70-130		%Rec	1	7/10/2019 5:56:05 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.03			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:23:00 PM
Lab ID: 1907197-008 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	16	1.5		mg/Kg	5	7/16/2019 8:07:25 PM	46203
Chloride	400	30		mg/Kg	20	7/16/2019 8:19:50 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:07:25 PM	46203
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:07:25 PM	46203
Sulfate	160	7.5		mg/Kg	5	7/16/2019 8:07:25 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.031		mg/Kg	1	7/17/2019 5:05:28 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.9		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Arsenic	ND	4.9		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Barium	310	0.20		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Beryllium	0.57	0.29		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Chromium	5.7	0.59		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Copper	4.8	0.59		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Iron	9700	250		mg/Kg	100	7/8/2019 8:31:53 AM	46034
Lead	2.1	0.49		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Manganese	180	0.20		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Selenium	ND	4.9		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Silver	ND	0.49		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Thallium	ND	4.9		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Uranium	ND	9.8		mg/Kg	2	7/8/2019 9:13:52 AM	46034
Zinc	22	4.9		mg/Kg	2	7/8/2019 9:13:52 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.095		µg/Kg	1	7/9/2019 5:44:49 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1221	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1232	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1242	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1248	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1254	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Aroclor 1260	ND	0.023		mg/Kg	1	7/16/2019 5:03:07 PM	46147
Surr: Decachlorobiphenyl	60.8	25.7-135		%Rec	1	7/16/2019 5:03:07 PM	46147
Surr: Tetrachloro-m-xylene	60.0	32.3-138		%Rec	1	7/16/2019 5:03:07 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.2		mg/Kg	1	7/11/2019 12:28:31 PM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:23:00 PM
Lab ID: 1907197-008 **Matrix:** SOIL
Received Date: 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	46		mg/Kg	1	7/11/2019 12:28:31 PM	46050
Surr: DNOP	91.8	70-130		%Rec	1	7/11/2019 12:28:31 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 1:13:33 PM	46033
Surr: BFB	104	73.8-119		%Rec	1	7/7/2019 1:13:33 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:54:00 PM	46114
1-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:54:00 PM	46114
2-Methylnaphthalene	ND	0.25		mg/Kg	1	7/19/2019 3:54:00 PM	46114
Benzo(a)pyrene	ND	0.0099		mg/Kg	1	7/19/2019 3:54:00 PM	46114
Surr: Benzo(e)pyrene	73.0	26.5-113		%Rec	1	7/19/2019 3:54:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Naphthalene	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 6:24:52 PM	46033
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Acetone	ND	0.73		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 6:24:52 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Chloroethane	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 6:24:52 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:23:00 PM
Lab ID: 1907197-008 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
2,2-Dichloropropane	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1-Dichloropropene	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Hexachlorobutadiene	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 6:24:52 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 6:24:52 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2,3-Trichlorobenzene	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
1,2,3-Trichloropropane	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 6:24:52 PM	46033
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2019 6:24:52 PM	46033

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Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2NV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 5:23:00 PM
Lab ID: 1907197-008 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	83.4	70-130		%Rec	1	7/10/2019 6:24:52 PM	46033
Surr: 1,2-Dichloroethane-d4	77.2	70-130		%Rec	1	7/10/2019 6:24:52 PM	46033
Surr: Toluene-d8	94.4	70-130		%Rec	1	7/10/2019 6:24:52 PM	46033
Surr: 4-Bromofluorobenzene	98.6	70-130		%Rec	1	7/10/2019 6:24:52 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.42			pH Units	1	7/17/2019 12:09:00 PM	R61445

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:19:00 PM
Lab ID: 1907197-009 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	2.0	1.5		mg/Kg	5	7/16/2019 8:32:15 PM	46203
Chloride	36	7.5		mg/Kg	5	7/16/2019 8:32:15 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:32:15 PM	46203
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:32:15 PM	46203
Sulfate	110	7.5		mg/Kg	5	7/16/2019 8:32:15 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 5:07:33 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.9		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Arsenic	ND	4.9		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Barium	250	0.20		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Beryllium	ND	0.29		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Chromium	1.8	0.59		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Copper	2.3	0.59		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Iron	4400	240		mg/Kg	100	7/8/2019 8:33:31 AM	46034
Lead	1.5	0.49		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Manganese	180	0.20		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Selenium	ND	4.9		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Silver	ND	0.49		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Thallium	ND	4.9		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Uranium	ND	9.8		mg/Kg	2	7/8/2019 9:15:39 AM	46034
Zinc	11	4.9		mg/Kg	2	7/8/2019 9:15:39 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.098		µg/Kg	1	7/9/2019 6:00:04 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 5:36:11 PM	46147
Surr: Decachlorobiphenyl	60.4	25.7-135		%Rec	1	7/16/2019 5:36:11 PM	46147
Surr: Tetrachloro-m-xylene	61.6	32.3-138		%Rec	1	7/16/2019 5:36:11 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/11/2019 12:53:12 PM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:19:00 PM
Lab ID: 1907197-009 **Matrix:** SOIL
Received Date: 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 12:53:12 PM	46050
Surr: DNOP	103	70-130		%Rec	1	7/11/2019 12:53:12 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/7/2019 1:36:13 PM	46033
Surr: BFB	102	73.8-119		%Rec	1	7/7/2019 1:36:13 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:20:00 PM	46114
1-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:20:00 PM	46114
2-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:20:00 PM	46114
Benzo(a)pyrene	ND	0.0098		mg/Kg	1	7/19/2019 4:20:00 PM	46114
Surr: Benzo(e)pyrene	77.4	26.5-113		%Rec	1	7/19/2019 4:20:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Toluene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Ethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Naphthalene	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 6:53:37 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Acetone	ND	0.74		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Bromobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Bromodichloromethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Bromoform	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 6:53:37 PM	46033
2-Butanone	ND	0.50		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Carbon disulfide	ND	0.50		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Carbon tetrachloride	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Chlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Chloroethane	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Chloroform	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 6:53:37 PM	46033
2-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
4-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
cis-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:19:00 PM
Lab ID: 1907197-009 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Dibromochloromethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Dibromomethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1-Dichloroethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1-Dichloroethene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,3-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
2,2-Dichloropropane	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1-Dichloropropene	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Hexachlorobutadiene	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
2-Hexanone	ND	0.50		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Isopropylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
4-Isopropyltoluene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 6:53:37 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 6:53:37 PM	46033
n-Propylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
sec-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Styrene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
tert-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
trans-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2,3-Trichlorobenzene	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Trichlorofluoromethane	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
1,2,3-Trichloropropane	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Vinyl chloride	ND	0.050		mg/Kg	1	7/10/2019 6:53:37 PM	46033
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2019 6:53:37 PM	46033

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-01
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:19:00 PM
Lab ID: 1907197-009 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	84.0	70-130		%Rec	1	7/10/2019 6:53:37 PM	46033
Surr: 1,2-Dichloroethane-d4	80.8	70-130		%Rec	1	7/10/2019 6:53:37 PM	46033
Surr: Toluene-d8	92.3	70-130		%Rec	1	7/10/2019 6:53:37 PM	46033
Surr: 4-Bromofluorobenzene	99.8	70-130		%Rec	1	7/10/2019 6:53:37 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	9.37			pH Units	1	7/17/2019 12:09:00 PM	R61445

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Qualifiers:

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D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
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P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:29:00 PM
Lab ID: 1907197-010 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	6.0	1.5		mg/Kg	5	7/16/2019 8:57:04 PM	46203
Chloride	490	30		mg/Kg	20	7/16/2019 9:09:28 PM	46203
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:57:04 PM	46203
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 8:57:04 PM	46203
Sulfate	430	7.5		mg/Kg	5	7/16/2019 8:57:04 PM	46203
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.031		mg/Kg	1	7/17/2019 5:09:38 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.9		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Arsenic	ND	4.9		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Barium	380	0.20		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Beryllium	0.43	0.29		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Cadmium	ND	0.20		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Chromium	3.3	0.59		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Copper	3.0	0.59		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Iron	6500	240		mg/Kg	100	7/8/2019 8:35:24 AM	46034
Lead	1.1	0.49		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Manganese	130	0.20		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Selenium	ND	4.9		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Silver	ND	0.49		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Thallium	ND	4.9		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Uranium	ND	9.8		mg/Kg	2	7/8/2019 9:17:24 AM	46034
Zinc	13	4.9		mg/Kg	2	7/8/2019 9:17:24 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.10		µg/Kg	1	7/9/2019 6:15:31 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1221	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1232	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1242	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1248	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1254	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Aroclor 1260	ND	0.024		mg/Kg	1	7/17/2019 7:22:47 PM	46172
Surr: Decachlorobiphenyl	64.0	25.7-135		%Rec	1	7/17/2019 7:22:47 PM	46172
Surr: Tetrachloro-m-xylene	68.4	32.3-138		%Rec	1	7/17/2019 7:22:47 PM	46172
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	7/11/2019 1:17:58 PM	46050

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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:29:00 PM
Lab ID: 1907197-010 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/11/2019 1:17:58 PM	46050
Surr: DNOP	101	70-130		%Rec	1	7/11/2019 1:17:58 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	7/7/2019 1:58:56 PM	46033
Surr: BFB	99.7	73.8-119		%Rec	1	7/7/2019 1:58:56 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:45:00 PM	46114
1-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:45:00 PM	46114
2-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 4:45:00 PM	46114
Benzo(a)pyrene	ND	0.0095		mg/Kg	1	7/19/2019 4:45:00 PM	46114
Surr: Benzo(e)pyrene	81.3	26.5-113		%Rec	1	7/19/2019 4:45:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Toluene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Ethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2,4-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,3,5-Trimethylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2-Dichloroethane (EDC)	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2-Dibromoethane (EDB)	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Naphthalene	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 7:22:20 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Acetone	ND	0.75		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Bromobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Bromodichloromethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Bromoform	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 7:22:20 PM	46033
2-Butanone	ND	0.50		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Carbon disulfide	ND	0.50		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Carbon tetrachloride	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Chlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Chloroethane	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Chloroform	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 7:22:20 PM	46033
2-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
4-Chlorotoluene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
cis-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033

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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:29:00 PM
Lab ID: 1907197-010 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Dibromochloromethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Dibromomethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,3-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,4-Dichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Dichlorodifluoromethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1-Dichloroethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1-Dichloroethene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,3-Dichloropropane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
2,2-Dichloropropane	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1-Dichloropropene	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Hexachlorobutadiene	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
2-Hexanone	ND	0.50		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Isopropylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
4-Isopropyltoluene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
4-Methyl-2-pentanone	ND	0.50		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 7:22:20 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 7:22:20 PM	46033
n-Propylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
sec-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Styrene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
tert-Butylbenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Tetrachloroethene (PCE)	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
trans-1,2-DCE	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
trans-1,3-Dichloropropene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2,3-Trichlorobenzene	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2,4-Trichlorobenzene	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1,1-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,1,2-Trichloroethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Trichloroethene (TCE)	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Trichlorofluoromethane	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
1,2,3-Trichloropropane	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Vinyl chloride	ND	0.050		mg/Kg	1	7/10/2019 7:22:20 PM	46033
Xylenes, Total	ND	0.10		mg/Kg	1	7/10/2019 7:22:20 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-02
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:29:00 PM
Lab ID: 1907197-010 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	85.7	70-130		%Rec	1	7/10/2019 7:22:20 PM	46033
Surr: 1,2-Dichloroethane-d4	79.6	70-130		%Rec	1	7/10/2019 7:22:20 PM	46033
Surr: Toluene-d8	94.0	70-130		%Rec	1	7/10/2019 7:22:20 PM	46033
Surr: 4-Bromofluorobenzene	99.4	70-130		%Rec	1	7/10/2019 7:22:20 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.48			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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P	Sample pH Not In Range
RL	Reporting Limit

Hall Environmental Analysis Laboratory, Inc.

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:37:00 PM
Lab ID: 1907197-011 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	ND	1.5		mg/Kg	5	7/16/2019 6:53:01 PM	46214
Chloride	65	7.5		mg/Kg	5	7/16/2019 6:53:01 PM	46214
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 6:53:01 PM	46214
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 6:53:01 PM	46214
Sulfate	81	7.5		mg/Kg	5	7/16/2019 6:53:01 PM	46214
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 5:11:43 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.8		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Arsenic	ND	4.8		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Barium	260	0.19		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Beryllium	0.38	0.29		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Cadmium	ND	0.19		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Chromium	2.7	0.57		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Copper	2.7	0.57		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Iron	6100	240		mg/Kg	100	7/8/2019 8:36:58 AM	46034
Lead	1.5	0.48		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Manganese	150	0.19		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Selenium	ND	4.8		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Silver	ND	0.48		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Thallium	ND	4.8		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Uranium	ND	9.5		mg/Kg	2	7/8/2019 9:19:10 AM	46034
Zinc	15	4.8		mg/Kg	2	7/8/2019 9:19:10 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.10		µg/Kg	1	7/9/2019 6:30:58 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 6:42:18 PM	46147
Surr: Decachlorobiphenyl	58.4	25.7-135		%Rec	1	7/16/2019 6:42:18 PM	46147
Surr: Tetrachloro-m-xylene	58.0	32.3-138		%Rec	1	7/16/2019 6:42:18 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.4		mg/Kg	1	7/11/2019 1:42:42 PM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:37:00 PM
Lab ID: 1907197-011 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	7/11/2019 1:42:42 PM	46050
Surr: DNOP	99.4	70-130		%Rec	1	7/11/2019 1:42:42 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 2:21:38 PM	46033
Surr: BFB	102	73.8-119		%Rec	1	7/7/2019 2:21:38 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.23		mg/Kg	1	7/19/2019 5:11:00 PM	46114
1-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 5:11:00 PM	46114
2-Methylnaphthalene	ND	0.23		mg/Kg	1	7/19/2019 5:11:00 PM	46114
Benzo(a)pyrene	ND	0.0094		mg/Kg	1	7/19/2019 5:11:00 PM	46114
Surr: Benzo(e)pyrene	65.2	26.5-113		%Rec	1	7/19/2019 5:11:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.024		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Naphthalene	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 7:51:00 PM	46033
2-Methylnaphthalene	ND	0.19		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Acetone	ND	0.73		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 7:51:00 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Chloroethane	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 7:51:00 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

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D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:37:00 PM
Lab ID: 1907197-011 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
2,2-Dichloropropane	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1-Dichloropropene	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Hexachlorobutadiene	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 7:51:00 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 7:51:00 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2,3-Trichlorobenzene	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
1,2,3-Trichloropropane	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 7:51:00 PM	46033
Xylenes, Total	ND	0.097		mg/Kg	1	7/10/2019 7:51:00 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-03
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:37:00 PM
Lab ID: 1907197-011 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	85.6	70-130		%Rec	1	7/10/2019 7:51:00 PM	46033
Surr: 1,2-Dichloroethane-d4	78.8	70-130		%Rec	1	7/10/2019 7:51:00 PM	46033
Surr: Toluene-d8	91.3	70-130		%Rec	1	7/10/2019 7:51:00 PM	46033
Surr: 4-Bromofluorobenzene	95.6	70-130		%Rec	1	7/10/2019 7:51:00 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	9.09			pH Units	1	7/17/2019 12:09:00 PM	R61445

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Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:47:00 PM
Lab ID: 1907197-012 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 300.0: ANIONS						Analyst: **MRA**	
Fluoride	8.7	1.5		mg/Kg	5	7/16/2019 7:17:51 PM	46214
Chloride	560	30		mg/Kg	20	7/16/2019 7:30:16 PM	46214
Nitrogen, Nitrite (As N)	ND	1.5		mg/Kg	5	7/16/2019 7:17:51 PM	46214
Nitrogen, Nitrate (As N)	ND	1.5		mg/Kg	5	7/16/2019 7:17:51 PM	46214
Sulfate	900	30		mg/Kg	20	7/16/2019 7:30:16 PM	46214
EPA METHOD 7471: MERCURY						Analyst: **rde**	
Mercury	ND	0.032		mg/Kg	1	7/17/2019 5:13:40 PM	46228
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Antimony	ND	4.8		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Arsenic	ND	4.8		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Barium	220	0.19		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Beryllium	0.47	0.29		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Cadmium	ND	0.19		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Chromium	5.2	0.58		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Copper	3.7	0.58		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Iron	8400	240		mg/Kg	100	7/8/2019 8:38:30 AM	46034
Lead	2.8	0.48		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Manganese	150	0.19		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Selenium	ND	4.8		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Silver	ND	0.48		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Thallium	ND	4.8		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Uranium	ND	9.7		mg/Kg	2	7/8/2019 9:20:56 AM	46034
Zinc	19	4.8		mg/Kg	2	7/8/2019 9:20:56 AM	46034
EPA METHOD 8011/504.1 MODIFIED: EDB						Analyst: **CLP**	
1,2-Dibromoethane	ND	0.096		µg/Kg	1	7/9/2019 6:46:26 PM	46062
EPA METHOD 8082A: PCB'S						Analyst: **TOM**	
Aroclor 1016	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1221	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1232	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1242	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1248	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1254	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Aroclor 1260	ND	0.024		mg/Kg	1	7/16/2019 7:15:16 PM	46147
Surr: Decachlorobiphenyl	41.6	25.7-135		%Rec	1	7/16/2019 7:15:16 PM	46147
Surr: Tetrachloro-m-xylene	41.2	32.3-138		%Rec	1	7/16/2019 7:15:16 PM	46147
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/11/2019 2:07:33 PM	46050

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:47:00 PM
Lab ID: 1907197-012 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **BRM**	
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	7/11/2019 2:07:33 PM	46050
Surr: DNOP	94.2	70-130		%Rec	1	7/11/2019 2:07:33 PM	46050
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/7/2019 2:44:19 PM	46033
Surr: BFB	101	73.8-119		%Rec	1	7/7/2019 2:44:19 PM	46033
EPA METHOD 8310: PAHS						Analyst: **TOM**	
Naphthalene	ND	0.24		mg/Kg	1	7/19/2019 6:02:00 PM	46114
1-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 6:02:00 PM	46114
2-Methylnaphthalene	ND	0.24		mg/Kg	1	7/19/2019 6:02:00 PM	46114
Benzo(a)pyrene	ND	0.0097		mg/Kg	1	7/19/2019 6:02:00 PM	46114
Surr: Benzo(e)pyrene	72.9	26.5-113		%Rec	1	7/19/2019 6:02:00 PM	46114
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Benzene	ND	0.025		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Toluene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Ethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Methyl tert-butyl ether (MTBE)	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2,4-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,3,5-Trimethylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2-Dichloroethane (EDC)	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2-Dibromoethane (EDB)	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Naphthalene	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 8:19:41 PM	46033
2-Methylnaphthalene	ND	0.20		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Acetone	ND	0.74		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Bromobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Bromodichloromethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Bromoform	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Bromomethane	ND	0.15		mg/Kg	1	7/10/2019 8:19:41 PM	46033
2-Butanone	ND	0.49		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Carbon disulfide	ND	0.49		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Carbon tetrachloride	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Chlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Chloroethane	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Chloroform	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Chloromethane	ND	0.15		mg/Kg	1	7/10/2019 8:19:41 PM	46033
2-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
4-Chlorotoluene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
cis-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:47:00 PM
Lab ID: 1907197-012 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
cis-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2-Dibromo-3-chloropropane	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Dibromochloromethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Dibromomethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,3-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,4-Dichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Dichlorodifluoromethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1-Dichloroethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1-Dichloroethene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,3-Dichloropropane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
2,2-Dichloropropane	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1-Dichloropropene	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Hexachlorobutadiene	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
2-Hexanone	ND	0.49		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Isopropylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
4-Isopropyltoluene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
4-Methyl-2-pentanone	ND	0.49		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Methylene chloride	ND	0.15		mg/Kg	1	7/10/2019 8:19:41 PM	46033
n-Butylbenzene	ND	0.15		mg/Kg	1	7/10/2019 8:19:41 PM	46033
n-Propylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
sec-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Styrene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
tert-Butylbenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1,1,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1,2,2-Tetrachloroethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Tetrachloroethene (PCE)	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
trans-1,2-DCE	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
trans-1,3-Dichloropropene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2,3-Trichlorobenzene	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2,4-Trichlorobenzene	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1,1-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,1,2-Trichloroethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Trichloroethene (TCE)	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Trichlorofluoromethane	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
1,2,3-Trichloropropane	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Vinyl chloride	ND	0.049		mg/Kg	1	7/10/2019 8:19:41 PM	46033
Xylenes, Total	ND	0.099		mg/Kg	1	7/10/2019 8:19:41 PM	46033

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

Analytical Report
Lab Order **1907197**
Date Reported: **8/7/2019**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: 190701-C2SV-04
Project: Agua Moss Sunco Landfarm
Collection Date: 7/1/2019 4:47:00 PM
Lab ID: 1907197-012 **Matrix:** SOIL **Received Date:** 7/3/2019 8:12:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8260B: VOLATILES						Analyst: **JMR**	
Surr: Dibromofluoromethane	82.8	70-130		%Rec	1	7/10/2019 8:19:41 PM	46033
Surr: 1,2-Dichloroethane-d4	80.6	70-130		%Rec	1	7/10/2019 8:19:41 PM	46033
Surr: Toluene-d8	94.3	70-130		%Rec	1	7/10/2019 8:19:41 PM	46033
Surr: 4-Bromofluorobenzene	98.3	70-130		%Rec	1	7/10/2019 8:19:41 PM	46033
EPA METHOD 9040C						Analyst: **JRR**	
pH	8.32			pH Units	1	7/17/2019 12:09:00 PM	R61445

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

SAMPLE RESULTS - 01

1907197-001B 90701-CIV-01
Collected date/time: 07/01/19 17:37

L1116606

ONE LAB. NATIONWIDE.

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:36	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/11/2019 13:21	WG1309518

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 00:07	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Atrazine	ND		0.333	1	07/16/2019 00:07	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 00:07	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 00:07	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 00:07	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 00:07	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 00:07	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 00:07	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 00:07	WG1311201
Carbazole	ND		0.333	1	07/16/2019 00:07	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 00:07	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 00:07	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 00:07	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 00:07	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 00:07	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 00:07	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 00:07	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 00:07	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 00:07	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 00:07	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Isophorone	ND		0.333	1	07/16/2019 00:07	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 00:07	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 00:07	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 00:07	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 00:07	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 00:07	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 00:07	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 00:07	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 00:07	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201

SAMPLE RESULTS - 01

190719?-001B 90701-CIV-01

Collected date/time: 07/01/19 17:37

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 00:07	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 00:07	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 00:07	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 00:07	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 00:07	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
Phenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 00:07	WG1311201
(S) 2-Fluorophenol	*86.9*		*12.0-120*		*07/16/2019 00:07*	WG1311201
(S) Phenol-d5	*85.8*		*10.0-120*		*07/16/2019 00:07*	WG1311201
(S) Nitrobenzene-d5	*54.8*		*10.0-122*		*07/16/2019 00:07*	WG1311201
(S) 2-Fluorobiphenyl	*34.3*		*15.0-120*		*07/16/2019 00:07*	WG1311201
(S) 2,4,6-Tribromophenol	*59.7*		*10.0-127*		*07/16/2019 00:07*	WG1311201
(S) p-Terphenyl-d14	*68.5*		*10.0-120*		*07/16/2019 00:07*	WG1311201

190797-002B 90701-CIV-02 SAMPLE RESULTS - 02 ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:45 L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:40	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/11/2019 13:22	WG1309518

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 12:36	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Atrazine	ND		0.333	1	07/16/2019 12:36	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 12:36	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 12:36	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 12:36	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 12:36	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 12:36	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 12:36	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 12:36	WG1311201
Carbazole	ND		0.333	1	07/16/2019 12:36	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 12:36	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 12:36	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 12:36	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 12:36	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 12:36	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 12:36	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 12:36	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 12:36	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 12:36	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 12:36	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Isophorone	ND		0.333	1	07/16/2019 12:36	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 12:36	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 12:36	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 12:36	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 12:36	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 12:36	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 12:36	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 12:36	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 12:36	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201

190719?-002B 90701-C1V-02 SAMPLE RESULTS - 02

Collected date/time: 07/01/19 17:45 L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 12:36	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 12:36	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 12:36	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 12:36	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 12:36	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
Phenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 12:36	WG1311201
(S) 2-Fluorophenol	*56.9*		*12.0-120*		*07/16/2019 12:36*	WG1311201
(S) Phenol-d5	*48.2*		*10.0-120*		*07/16/2019 12:36*	WG1311201
(S) Nitrobenzene-d5	*43.9*		*10.0-122*		*07/16/2019 12:36*	WG1311201
(S) 2-Fluorobiphenyl	*41.7*		*15.0-120*		*07/16/2019 12:36*	WG1311201
(S) 2,4,6-Tribromophenol	*41.4*		*10.0-127*		*07/16/2019 12:36*	WG1311201
(S) p-Terphenyl-d14	*56.4*		*10.0-120*		*07/16/2019 12:36*	WG1311201

190797-003B 90701-CIV-03

SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:55

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:41	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:52	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 12:55	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Atrazine	ND		0.333	1	07/16/2019 12:55	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 12:55	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 12:55	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 12:55	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 12:55	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 12:55	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 12:55	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 12:55	WG1311201
Carbazole	ND		0.333	1	07/16/2019 12:55	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 12:55	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 12:55	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 12:55	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 12:55	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 12:55	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 12:55	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 12:55	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 12:55	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 12:55	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 12:55	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Isophorone	ND		0.333	1	07/16/2019 12:55	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 12:55	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 12:55	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 12:55	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 12:55	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 12:55	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 12:55	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 12:55	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 12:55	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201

190197-003B 90701-CIV-03 SAMPLE RESULTS - 03

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 17:55 L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 12:55	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 12:55	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 12:55	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 12:55	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 12:55	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
Phenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 12:55	WG1311201
(S) 2-Fluorophenol	*59.3*		*12.0-120*		*07/16/2019 12:55*	WG1311201
(S) Phenol-d5	*51.1*		*10.0-120*		*07/16/2019 12:55*	WG1311201
(S) Nitrobenzene-d5	*46.0*		*10.0-122*		*07/16/2019 12:55*	WG1311201
(S) 2-Fluorobiphenyl	*43.8*		*15.0-120*		*07/16/2019 12:55*	WG1311201
(S) 2,4,6-Tribromophenol	*44.6*		*10.0-127*		*07/16/2019 12:55*	WG1311201
(S) p-Terphenyl-d14	*57.8*		*10.0-120*		*07/16/2019 12:55*	WG1311201

1907197-004B 90701-CIV-04 SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 18:05

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND	J6	0.250	1	07/15/2019 18:42	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:54	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 11:43	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Atrazine	ND		0.333	1	07/16/2019 11:43	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 11:43	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 11:43	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 11:43	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 11:43	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 11:43	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 11:43	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 11:43	WG1311201
Carbazole	ND		0.333	1	07/16/2019 11:43	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 11:43	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 11:43	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 11:43	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 11:43	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 11:43	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 11:43	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 11:43	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 11:43	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 11:43	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 11:43	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Isophorone	ND		0.333	1	07/16/2019 11:43	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 11:43	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 11:43	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 11:43	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 11:43	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 11:43	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 11:43	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 11:43	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 11:43	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201

1907197-004B 90701-C1v-04

SAMPLE RESULTS - 04

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 18:05

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 11:43	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 11:43	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 11:43	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 11:43	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 11:43	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
Phenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 11:43	WG1311201
(S) 2-Fluorophenol	*59.2*		*12.0-120*		*07/16/2019 11:43*	WG1311201
(S) Phenol-d5	*50.0*		*10.0-120*		*07/16/2019 11:43*	WG1311201
(S) Nitrobenzene-d5	*45.3*		*10.0-122*		*07/16/2019 11:43*	WG1311201
(S) 2-Fluorobiphenyl	*44.3*		*15.0-120*		*07/16/2019 11:43*	WG1311201
(S) 2,4,6-Tribromophenol	*46.7*		*10.0-127*		*07/16/2019 11:43*	WG1311201
(S) p-Terphenyl-d14	*67.4*		*10.0-120*		*07/16/2019 11:43*	WG1311201

1907197-005B 90701-C2NV-01

SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 16:56

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:45	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	0.724		0.670	1	07/16/2019 20:55	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 14:14	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Atrazine	ND		0.333	1	07/16/2019 14:14	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 14:14	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 14:14	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 14:14	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 14:14	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 14:14	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 14:14	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 14:14	WG1311201
Carbazole	ND		0.333	1	07/16/2019 14:14	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 14:14	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 14:14	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 14:14	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 14:14	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 14:14	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 14:14	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 14:14	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 14:14	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 14:14	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 14:14	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Isophorone	ND		0.333	1	07/16/2019 14:14	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 14:14	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 14:14	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 14:14	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 14:14	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 14:14	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 14:14	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 14:14	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 14:14	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201

1907197-005B 90701-C2NV-01

SAMPLE RESULTS - 05

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:56

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 14:14	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 14:14	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 14:14	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 14:14	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 14:14	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
Phenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 14:14	WG1311201
(S) 2-Fluorophenol	*61.2*		*12.0-120*		*07/16/2019 14:14*	WG1311201
(S) Phenol-d5	*53.8*		*10.0-120*		*07/16/2019 14:14*	WG1311201
(S) Nitrobenzene-d5	*49.4*		*10.0-122*		*07/16/2019 14:14*	WG1311201
(S) 2-Fluorobiphenyl	*46.9*		*15.0-120*		*07/16/2019 14:14*	WG1311201
(S) 2,4,6-Tribromophenol	*53.2*		*10.0-127*		*07/16/2019 14:14*	WG1311201
(S) p-Terphenyl-d14	*57.4*		*10.0-120*		*07/16/2019 14:14*	WG1311201

1907197-006B 90701-C2NV-02

SAMPLE RESULTS - 06

L1116606

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:06

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:46	WG1310073

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:56	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 13:54	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Atrazine	ND		0.333	1	07/16/2019 13:54	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 13:54	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 13:54	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 13:54	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 13:54	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 13:54	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 13:54	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 13:54	WG1311201
Carbazole	ND		0.333	1	07/16/2019 13:54	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 13:54	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 13:54	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 13:54	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 13:54	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 13:54	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 13:54	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 13:54	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 13:54	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 13:54	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 13:54	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Isophorone	ND		0.333	1	07/16/2019 13:54	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 13:54	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 13:54	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 13:54	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 13:54	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 13:54	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 13:54	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 13:54	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 13:54	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201

1907197-006B 90701-C2NV-02

SAMPLE RESULTS - 06

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 17:06

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 13:54	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 13:54	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 13:54	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 13:54	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 13:54	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
Phenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 13:54	WG1311201
(S) 2-Fluorophenol	*65.6*		*12.0-120*		*07/16/2019 13:54*	WG1311201
(S) Phenol-d5	*54.6*		*10.0-120*		*07/16/2019 13:54*	WG1311201
(S) Nitrobenzene-d5	*51.7*		*10.0-122*		*07/16/2019 13:54*	WG1311201
(S) 2-Fluorobiphenyl	*51.4*		*15.0-120*		*07/16/2019 13:54*	WG1311201
(S) 2,4,6-Tribromophenol	*53.4*		*10.0-127*		*07/16/2019 13:54*	WG1311201
(S) p-Terphenyl-d14	*63.9*		*10.0-120*		*07/16/2019 13:54*	WG1311201

1907197-007B 90701-C2NV-03

SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:14

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:47	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:56	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 13:15	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Atrazine	ND		0.333	1	07/16/2019 13:15	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 13:15	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 13:15	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 13:15	WG1311201
Bis(2-chlcroethyl)ether	ND		0.333	1	07/16/2019 13:15	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 13:15	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 13:15	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 13:15	WG1311201
Carbazole	ND		0.333	1	07/16/2019 13:15	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 13:15	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 13:15	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 13:15	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 13:15	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 13:15	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 13:15	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 13:15	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 13:15	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 13:15	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 13:15	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Isophorone	ND		0.333	1	07/16/2019 13:15	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 13:15	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 13:15	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 13:15	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 13:15	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 13:15	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 13:15	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 13:15	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 13:15	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201

1907197-007B 90701-C2NV-03

SAMPLE RESULTS - 07

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:14

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 13:15	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 13:15	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 13:15	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 13:15	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 13:15	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
Phenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 13:15	WG1311201
(S) 2-Fluorophenol	*61.3*		*12.0-120*		*07/16/2019 13:15*	WG1311201
(S) Phenol-d5	*50.2*		*10.0-120*		*07/16/2019 13:15*	WG1311201
(S) Nitrobenzene-d5	*48.3*		*10.0-122*		*07/16/2019 13:15*	WG1311201
(S) 2-Fluorobiphenyl	*45.9*		*15.0-120*		*07/16/2019 13:15*	WG1311201
(S) 2,4,6-Tribromophenol	*47.4*		*10.0-127*		*07/16/2019 13:15*	WG1311201
(S) p-Terphenyl-d14	*58.0*		*10.0-120*		*07/16/2019 13:15*	WG1311201

1907197-008B 90701-C2NV-04

SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 17:23

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:49	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:57	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 01:44	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Atrazine	ND		0.333	1	07/16/2019 01:44	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 01:44	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 01:44	WG1311201
Bis(2-chloroethoxy)methane	ND		0.333	1	07/16/2019 01:44	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 01:44	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 01:44	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 01:44	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 01:44	WG1311201
Carbazole	ND		0.333	1	07/16/2019 01:44	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 01:44	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 01:44	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 01:44	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 01:44	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 01:44	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 01:44	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 01:44	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 01:44	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 01:44	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 01:44	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Isophorone	ND		0.333	1	07/16/2019 01:44	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 01:44	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 01:44	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 01:44	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 01:44	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 01:44	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 01:44	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 01:44	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 01:44	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201

1907197-008B 90701-C2NV-04

SAMPLE RESULTS - 08

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 17:23

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 01:44	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 01:44	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 01:44	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 01:44	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 01:44	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
Phenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 01:44	WG1311201
(S) 2-Fluorophenol	*52.8*		*12.0-120*		*07/16/2019 01:44*	WG1311201
(S) Phenol-d5	*46.9*		*10.0-120*		*07/16/2019 01:44*	WG1311201
(S) Nitrobenzene-d5	*45.1*		*10.0-122*		*07/16/2019 01:44*	WG1311201
(S) 2-Fluorobiphenyl	*38.7*		*15.0-120*		*07/16/2019 01:44*	WG1311201
(S) 2,4,6-Tribromophenol	*44.8*		*10.0-127*		*07/16/2019 01:44*	WG1311201
(S) p-Terphenyl-d14	*62.3*		*10.0-120*		*07/16/2019 01:44*	WG1311201

SAMPLE RESULTS - 09

Collected date/time: 07/01/19 16:19

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:52	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 20:58	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 02:04	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Atrazine	ND		0.333	1	07/16/2019 02:04	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 02:04	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 02:04	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 02:04	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 02:04	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 02:04	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 02:04	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 02:04	WG1311201
Carbazole	ND		0.333	1	07/16/2019 02:04	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 02:04	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 02:04	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 02:04	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 02:04	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 02:04	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 02:04	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 02:04	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 02:04	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 02:04	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 02:04	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Isophorone	ND		0.333	1	07/16/2019 02:04	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 02:04	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 02:04	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 02:04	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 02:04	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 02:04	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 02:04	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 02:04	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 02:04	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201

SAMPLE RESULTS - 09

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:19

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 02:04	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 02:04	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 02:04	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 02:04	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 02:04	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
Phenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 02:04	WG1311201
(S) 2-Fluorophenol	*70.5*		*12.0-120*		*07/16/2019 02:04*	WG1311201
(S) Phenol-d5	*67.2*		*10.0-120*		*07/16/2019 02:04*	WG1311201
(S) Nitrobenzene-d5	*50.3*		*10.0-122*		*07/16/2019 02:04*	WG1311201
(S) 2-Fluorobiphenyl	*35.0*		*15.0-120*		*07/16/2019 02:04*	WG1311201
(S) 2,4,6-Tribromophenol	*44.4*		*10.0-127*		*07/16/2019 02:04*	WG1311201
(S) p-Terphenyl-d14	*76.6*		*10.0-120*		*07/16/2019 02:04*	WG1311201

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SAMPLE RESULTS - 10

L1116606

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:29

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND	J3 J6	0.250	1	07/15/2019 18:53	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 21:01	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 13:34	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Atrazine	ND		0.333	1	07/16/2019 13:34	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 13:34	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 13:34	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 13:34	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 13:34	WG1311201
Bis(2-chlorcisopropyl)ether	ND		0.333	1	07/16/2019 13:34	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 13:34	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 13:34	WG1311201
Carbazole	ND		0.333	1	07/16/2019 13:34	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 13:34	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 13:34	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 13:34	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 13:34	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 13:34	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 13:34	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 13:34	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 13:34	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 13:34	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 13:34	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Isophorone	ND		0.333	1	07/16/2019 13:34	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 13:34	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 13:34	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 13:34	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 13:34	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 13:34	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 13:34	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 13:34	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 13:34	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201

Collected date/time: 07/01/19 16:29 L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 13:34	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 13:34	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 13:34	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 13:34	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 13:34	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
Phenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 13:34	WG1311201
(S) 2-Fluorophenol	*68.0*		*12.0-120*		*07/16/2019 13:34*	WG1311201
(S) Phenol-d5	*60.1*		*10.0-120*		*07/16/2019 13:34*	WG1311201
(S) Nitrobenzene-d5	*51.8*		*10.0-122*		*07/16/2019 13:34*	WG1311201
(S) 2-Fluorobiphenyl	*50.9*		*15.0-120*		*07/16/2019 13:34*	WG1311201
(S) 2,4,6-Tribromophenol	*58.1*		*10.0-127*		*07/16/2019 13:34*	WG1311201
(S) p-Terphenyl-d14	*64.6*		*10.0-120*		*07/16/2019 13:34*	WG1311201

1907197-011B 90701-C2SV-03

SAMPLE RESULTS - 11

ONE LAB. NATIONWIDE

Collected date/time: 07/01/19 16:37

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:56	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 21:02	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 14:33	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Atrazine	ND		0.333	1	07/16/2019 14:33	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 14:33	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 14:33	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 14:33	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 14:33	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 14:33	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 14:33	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 14:33	WG1311201
Carbazole	ND		0.333	1	07/16/2019 14:33	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 14:33	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 14:33	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 14:33	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 14:33	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 14:33	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 14:33	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 14:33	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 14:33	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 14:33	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 14:33	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Isophorone	ND		0.333	1	07/16/2019 14:33	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 14:33	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 14:33	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 14:33	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 14:33	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 14:33	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 14:33	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 14:33	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 14:33	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201

1907197-011B 90701-C2SV-03

SAMPLE RESULTS - 11

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:37

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 14:33	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 14:33	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 14:33	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 14:33	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 14:33	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
Phenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 14:33	WG1311201
(S) 2-Fluorophenol	*61.9*		*12.0-120*		*07/16/2019 14:33*	WG1311201
(S) Phenol-d5	*52.8*		*10.0-120*		*07/16/2019 14:33*	WG1311201
(S) Nitrobenzene-d5	*49.1*		*10.0-122*		*07/16/2019 14:33*	WG1311201
(S) 2-Fluorobiphenyl	*47.2*		*15.0-120*		*07/16/2019 14:33*	WG1311201
(S) 2,4,6-Tribromophenol	*48.7*		*10.0-127*		*07/16/2019 14:33*	WG1311201
(S) p-Terphenyl-d14	*70.0*		*10.0-120*		*07/16/2019 14:33*	WG1311201

1907197-012B 90701-C2SV-04

SAMPLE RESULTS - 12

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:47

L1116606

Wet Chemistry by Method 9012B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Cyanide	ND		0.250	1	07/15/2019 18:57	WG1310079

Wet Chemistry by Method 9066

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Total Phenol by 4AAP	ND		0.670	1	07/16/2019 21:03	WG1311885

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Acenaphthylene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Acetophenone	ND		0.333	1	07/16/2019 14:53	WG1311201
Anthracene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Atrazine	ND		0.333	1	07/16/2019 14:53	WG1311201
Benzaldehyde	ND		0.333	1	07/16/2019 14:53	WG1311201
Benzo(a)anthracene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Benzo(b)fluoranthene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Benzo(k)fluoranthene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Benzo(g,h,i)perylene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Benzo(a)pyrene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Biphenyl	ND	J4	0.333	1	07/16/2019 14:53	WG1311201
Bis(2-chlorethoxy)methane	ND		0.333	1	07/16/2019 14:53	WG1311201
Bis(2-chloroethyl)ether	ND		0.333	1	07/16/2019 14:53	WG1311201
Bis(2-chloroisopropyl)ether	ND		0.333	1	07/16/2019 14:53	WG1311201
4-Bromophenyl-phenylether	ND		0.333	1	07/16/2019 14:53	WG1311201
Caprolactam	ND		0.333	1	07/16/2019 14:53	WG1311201
Carbazole	ND		0.333	1	07/16/2019 14:53	WG1311201
4-Chloroaniline	ND		0.333	1	07/16/2019 14:53	WG1311201
2-Chloronaphthalene	ND		0.0333	1	07/16/2019 14:53	WG1311201
4-Chlorophenyl-phenylether	ND		0.333	1	07/16/2019 14:53	WG1311201
Chrysene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Dibenz(a,h)anthracene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Dibenzofuran	ND	J4	0.333	1	07/16/2019 14:53	WG1311201
3,3-Dichlorobenzidine	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4-Dinitrotoluene	ND		0.333	1	07/16/2019 14:53	WG1311201
2,6-Dinitrotoluene	ND		0.333	1	07/16/2019 14:53	WG1311201
Fluoranthene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Fluorene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Hexachlorobenzene	ND		0.333	1	07/16/2019 14:53	WG1311201
Hexachloro-1,3-butadiene	ND		0.333	1	07/16/2019 14:53	WG1311201
Hexachlorocyclopentadiene	ND		0.333	1	07/16/2019 14:53	WG1311201
Hexachloroethane	ND		0.333	1	07/16/2019 14:53	WG1311201
Indeno(1,2,3-cd)pyrene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Isophorone	ND		0.333	1	07/16/2019 14:53	WG1311201
2-Methylnaphthalene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Naphthalene	ND		0.0333	1	07/16/2019 14:53	WG1311201
2-Nitroaniline	ND		0.333	1	07/16/2019 14:53	WG1311201
3-Nitroaniline	ND		0.333	1	07/16/2019 14:53	WG1311201
4-Nitroaniline	ND		0.333	1	07/16/2019 14:53	WG1311201
Nitrobenzene	ND		0.333	1	07/16/2019 14:53	WG1311201
n-Nitrosodiphenylamine	ND		0.333	1	07/16/2019 14:53	WG1311201
n-Nitrosodi-n-propylamine	ND		0.333	1	07/16/2019 14:53	WG1311201
Phenanthrene	ND		0.0333	1	07/16/2019 14:53	WG1311201
Benzylbutyl phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201

1907197-012B 90701-C2SV-04

SAMPLE RESULTS - 12

ONE LAB. NATIONWIDE.

Collected date/time: 07/01/19 16:47

L1116606

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Bis(2-ethylhexyl)phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201
Di-n-butyl phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201
Diethyl phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201
Dimethyl phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201
Di-n-octyl phthalate	ND		0.333	1	07/16/2019 14:53	WG1311201
Pyrene	ND		0.0333	1	07/16/2019 14:53	WG1311201
1,2,4,5-Tetrachlorobenzene	ND		0.333	1	07/16/2019 14:53	WG1311201
4-Chloro-3-methylphenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2-Chlorophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2-Methylphenol	ND		0.333	1	07/16/2019 14:53	WG1311201
3&4-Methyl Phenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4-Dichlorophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4-Dimethylphenol	ND		0.333	1	07/16/2019 14:53	WG1311201
4,6-Dinitro-2-methylphenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4-Dinitrophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2-Nitrophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
4-Nitrophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
Pentachlorophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
Phenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4,5-Trichlorophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
2,4,6-Trichlorophenol	ND		0.333	1	07/16/2019 14:53	WG1311201
(S) 2-Fluorophenol	*57.4*		*12.0-120*		*07/16/2019 14:53*	WG1311201
(S) Phenol-d5	*49.5*		*10.0-120*		*07/16/2019 14:53*	WG1311201
(S) Nitrobenzene-d5	*44.0*		*10.0-122*		*07/16/2019 14:53*	WG1311201
(S) 2-Fluorobiphenyl	*42.8*		*15.0-120*		*07/16/2019 14:53*	WG1311201
(S) 2,4,6-Tribromophenol	*42.8*		*10.0-127*		*07/16/2019 14:53*	WG1311201
(S) p-Terphenyl-d14	*67.7*		*10.0-120*		*07/16/2019 14:53*	WG1311201

Method Blank (MB)

(MB) R3430818-1 07/15/19 18:28

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Cyanide	U		0.0390	0.250

L1116606-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1116606-01 07/15/19 18:36 • (DUP) R3430818-3 07/15/19 18:37

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	ND	0.0491	1	0.000		20

L1116606-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1116606-07 07/15/19 18:47 • (DUP) R3430818-6 07/15/19 18:48

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Cyanide	ND	0.0518	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3430818-2 07/15/19 18:29

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Cyanide	2.50	2.24	89.5	50.0-150	

L1116606-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1116606-04 07/15/19 18:42 • (MS) R3430818-4 07/15/19 18:43 • (MSD) R3430818-5 07/15/19 18:44

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Cyanide	1.67	ND	0.925	0.791	55.5	47.5	1	75.0-125	J6	J6	15.6	20

L1116606-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1116606-10 07/15/19 18:53 • (MS) R3430818-7 07/15/19 18:54 • (MSD) R3430818-8 07/15/19 18:55

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Cyanide	1.67	ND	0.669	0.940	37.1	53.4	1	75.0-125	J6	J3 J6	33.7	20

Received by OCD: 9/8/2020 4:24:00 PM

Received by OCD: 9/8/2020 4:24:06 PM

Method Blank (MB)

(MB) R3429755-1 07/11/19 13:09

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Total Phenol by 4AAP	U		0.220	0.670

L1113860-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1113860-01 07/11/19 13:13 • (DUP) R3429755-3 07/11/19 13:14

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Total Phenol by 4AAP	ND	0.233	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3429755-2 07/11/19 13:10

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Total Phenol by 4AAP	8.33	7.82	93.8	90.0-110	

L1113860-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1113860-02 07/11/19 13:14 • (MS) R3429755-4 07/11/19 13:15 • (MSD) R3429755-5 07/11/19 13:16

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Total Phenol by 4AAP	16.7	ND	12.3	12.9	73.5	77.2	1	90.0-110	J6	J6	4.88	20

Received by OCD: 9/8/2020 4:24:00 PM

Method Blank (MB)

(MB) R3431251-1 07/16/19 20:51

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/kg		mg/kg	mg/kg
Total Phenol by 4AAP	U		0.220	0.670

L1116606-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1116606-03 07/16/19 20:52 • (DUP) R3431251-3 07/16/19 20:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Total Phenol by 4AAP	ND	0.000	1	0.000		20

L1116606-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1116606-12 07/16/19 21:03 • (DUP) R3431251-5 07/16/19 21:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/kg	mg/kg		%		%
Total Phenol by 4AAP	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3431251-2 07/16/19 20:52

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/kg	mg/kg	%	%	
Total Phenol by 4AAP	8.33	8.56	103	90.0-110	

L1116606-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1116606-09 07/16/19 20:58 • (MS) R3431251-4 07/16/19 21:00

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
	mg/kg	mg/kg	mg/kg	%		%	
Total Phenol by 4AAP	16.7	ND	15.7	94.2	1	90.0-110	

L1118130-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1118130-02 07/16/19 21:05 • (MS) R3431251-6 07/16/19 21:06 • (MSD) R3431251-7 07/16/19 21:07

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Total Phenol by 4AAP	16.7	U	14.6	14.8	87.2	88.7	1	90.0-110	J6	J6	1.65	20

Received by OCD: 9/8/2020 4:24:06 PM

Method Blank (MB)

(MB) R3431357-2 07/15/19 23:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00642	0.0333
Acenaphthylene	U		0.00671	0.0333
Acetophenone	U		0.0752	0.333
Anthracene	U		0.00632	0.0333
Atrazine	U		0.0938	0.333
Benzaldehyde	U		0.0532	0.333
Benzo(a)anthracene	U		0.00428	0.0333
Benzo(b)fluoranthene	U		0.00695	0.0333
Benzo(k)fluoranthene	U		0.00582	0.0333
Benzo(g,h,i)perylene	U		0.00721	0.0333
Benzo(a)pyrene	U		0.00548	0.0333
Biphenyl	U		0.00588	0.333
Bis(2-chlorethoxy)methane	U		0.00770	0.333
Bis(2-chloroethyl)ether	U		0.00896	0.333
Bis(2-chloroisopropyl)ether	U		0.00760	0.333
4-Bromophenyl-phenylether	U		0.0114	0.333
Caprolactam	U		0.104	0.333
Carbazole	U		0.00524	0.333
4-Chloroaniline	U		0.0352	0.333
2-Chloronaphthalene	U		0.00639	0.0333
4-Chlorophenyl-phenylether	U		0.00627	0.333
Chrysene	U		0.00555	0.0333
Dibenz(a,h)anthracene	U		0.00821	0.0333
Dibenzofuran	U		0.00518	0.333
3,3-Dichlorobenzidine	U		0.0794	0.333
2,4-Dinitrotoluene	U		0.00607	0.333
2,6-Dinitrotoluene	U		0.00737	0.333
Fluoranthene	U		0.00496	0.0333
Fluorene	U		0.00682	0.0333
Hexachlorobenzene	U		0.00856	0.333
Hexachloro-1,3-butadiene	U		0.0100	0.333
Hexachlorocyclopentadiene	U		0.0587	0.333
Hexachloroethane	U		0.0134	0.333
Indeno(1,2,3-cd)pyrene	U		0.00772	0.0333
Isophorone	U		0.00522	0.333
2-Methylnaphthalene	U		0.00861	0.0333
Naphthalene	U		0.00889	0.0333
2-Nitroaniline	U		0.00755	0.333
3-Nitroaniline	U		0.00850	0.333
4-Nitroaniline	U		0.00639	0.333

Received by OCD: 9/8/2020 4:24:06 PM

Method Blank (MB)

(MB) R3431357-2 07/15/19 23:48

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Nitrobenzene	U		0.00695	0.333
n-Nitrosodiphenylamine	U		0.0900	0.333
n-Nitrosodi-n-propylamine	U		0.00906	0.333
Phenanthrene	U		0.00528	0.0333
Benzylbutyl phthalate	U		0.0103	0.333
Bis(2-ethylhexyl)phthalate	U		0.0120	0.333
Di-n-butyl phthalate	U		0.0109	0.333
Diethyl phthalate	U		0.00691	0.333
Dimethyl phthalate	U		0.00540	0.333
Di-n-octyl phthalate	U		0.00907	0.333
Pyrene	U		0.0123	0.0333
4-Chloro-3-methylphenol	U		0.00477	0.333
2-Chlorophenol	U		0.00831	0.333
2-Methylphenol	U		0.00986	0.333
3&4-Methyl Phenol	U		0.00783	0.333
2,4-Dichlorophenol	U		0.00746	0.333
2,4-Dimethylphenol	U		0.0471	0.333
4,6-Dinitro-2-methylphenol	U		0.124	0.333
2,4-Dinitrophenol	U		0.0980	0.333
2-Nitrophenol	U		0.0130	0.333
4-Nitrophenol	U		0.0525	0.333
Pentachlorophenol	U		0.0480	0.333
Phenol	U		0.00695	0.333
1,2,4,5-Tetrachlorobenzene	U		0.0762	0.333
2,4,5-Trichlorophenol	U		0.0104	0.333
2,4,6-Trichlorophenol	U		0.00779	0.333
(S) Nitrobenzene-d5	*55.6*			*10.0-122*
(S) 2-Fluorobiphenyl	*42.9*			*15.0-120*
(S) p-Terphenyl-d14	*75.7*			*10.0-120*
(S) Phenol-d5	*57.5*			*10.0-120*
(S) 2-Fluorophenol	*65.3*			*12.0-120*
(S) 2,4,6-Tribromophenol	*66.1*			*10.0-127*

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

L1116606-01,02,03,04,05,06,07,08,09,10,11,12

Laboratory Control Sample (LCS)

(LCS) R3431357-1 07/15/19 23:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.666	0.264	39.6	38.0-120	
Acenaphthylene	0.666	0.270	40.5	40.0-120	
Acetophenone	0.666	0.312	46.8	29.0-120	
Anthracene	0.666	0.390	58.6	42.0-120	
Atrazine	0.666	0.397	59.6	43.0-120	
Benzaldehyde	0.666	0.340	51.1	10.0-160	
Benzo(a)anthracene	0.666	0.480	72.1	44.0-120	
Benzo(b)fluoranthene	0.666	0.490	73.6	43.0-120	
Benzo(k)fluoranthene	0.666	0.489	73.4	44.0-120	
Benzo(g,h,i)perylene	0.666	0.544	81.7	43.0-120	
Benzo(a)pyrene	0.666	0.484	72.7	45.0-120	
Biphenyl	0.666	0.237	35.6	39.0-120	J4
Bis(2-chlorethoxy)methane	0.666	0.277	41.6	20.0-120	
Bis(2-chloroethyl)ether	0.666	0.269	40.4	16.0-120	
Bis(2-chloroisopropyl)ether	0.666	0.256	38.4	23.0-120	
4-Bromophenyl-phenylether	0.666	0.397	59.6	40.0-120	
Caprolactam	0.666	0.502	75.4	38.0-120	
Carbazole	0.666	0.440	66.1	48.0-120	
4-Chloroaniline	0.666	0.338	50.8	18.0-120	
2-Chloronaphthalene	0.666	0.242	36.3	35.0-120	
4-Chlorophenyl-phenylether	0.666	0.314	47.1	40.0-120	
Chrysene	0.666	0.551	82.7	43.0-120	
Dibenz(a,h)anthracene	0.666	0.460	69.1	44.0-120	
Dibenzofuran	0.666	0.279	41.9	44.0-120	J4
3,3-Dichlorobenzidine	1.33	0.971	73.0	28.0-120	
2,4-Dinitrotoluene	0.666	0.406	61.0	45.0-120	
2,6-Dinitrotoluene	0.666	0.347	52.1	42.0-120	
Fluoranthene	0.666	0.509	76.4	44.0-120	
Fluorene	0.666	0.304	45.6	41.0-120	
Hexachlorobenzene	0.666	0.408	61.3	39.0-120	
Hexachloro-1,3-butadiene	0.666	0.238	35.7	15.0-120	
Hexachlorocyclopentadiene	0.666	0.228	34.2	15.0-120	
Hexachloroethane	0.666	0.250	37.5	17.0-120	
Indeno(1,2,3-cd)pyrene	0.666	0.520	78.1	45.0-120	
Isophorone	0.666	0.296	44.4	23.0-120	
2-Methylnaphthalene	0.666	0.266	39.9	34.0-120	
Naphthalene	0.666	0.276	41.4	18.0-120	
2-Nitroaniline	0.666	0.341	51.2	46.0-120	
3-Nitroaniline	0.666	0.355	53.3	36.0-120	
4-Nitroaniline	0.666	0.362	54.4	36.0-120	

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Laboratory Control Sample (LCS)

(LCS) R3431357-1 07/15/19 23:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Nitrobenzene	0.666	0.277	41.6	17.0-120	
n-Nitrosodiphenylamine	0.666	0.397	59.6	40.0-120	
n-Nitrosodi-n-propylamine	0.666	0.333	50.0	26.0-120	
Phenanthrene	0.666	0.448	67.3	42.0-120	
Benzylbutyl phthalate	0.666	0.584	87.7	40.0-120	
Bis(2-ethylhexyl)phthalate	0.666	0.577	86.6	41.0-120	
Di-n-butyl phthalate	0.666	0.487	73.1	43.0-120	
Diethyl phthalate	0.666	0.379	56.9	43.0-120	
Dimethyl phthalate	0.666	0.329	49.4	43.0-120	
Di-n-octyl phthalate	0.666	0.564	84.7	40.0-120	
Pyrene	0.666	0.485	72.8	41.0-120	
4-Chloro-3-methylphenol	0.666	0.388	58.3	28.0-120	
2-Chlorophenol	0.666	0.335	50.3	28.0-120	
2-Methylphenol	0.666	0.414	62.2	35.0-120	
3&4-Methyl Phenol	0.666	0.450	67.6	42.0-120	
2,4-Dichlorophenol	0.666	0.333	50.0	25.0-120	
2,4-Dimethylphenol	0.666	0.333	50.0	15.0-120	
4,6-Dinitro-2-methylphenol	0.666	0.376	56.5	16.0-120	
2,4-Dinitrophenol	0.666	0.215	32.3	10.0-120	
2-Nitrophenol	0.666	0.317	47.6	20.0-120	
4-Nitrophenol	0.666	0.405	60.8	27.0-120	
Pentachlorophenol	0.666	0.457	68.6	29.0-120	
Phenol	0.666	0.374	56.2	28.0-120	
1,2,4,5-Tetrachlorobenzene	0.666	0.352	52.9	30.0-120	
2,4,5-Trichlorophenol	0.666	0.371	55.7	38.0-120	
2,4,6-Trichlorophenol	0.666	0.318	47.7	37.0-120	
(S) Nitrobenzene-d5			*39.3*	*10.0-122*	
(S) 2-Fluorobiphenyl			*35.1*	*15.0-120*	
(S) p-Terphenyl-d14			*79.0*	*10.0-120*	
(S) Phenol-d5			*57.1*	*10.0-120*	
(S) 2-Fluorophenol			*58.1*	*12.0-120*	
(S) 2,4,6-Tribromophenol			*73.0*	*10.0-127*	

Semi Volatile Organic Compounds (GC/MS) by Method 8270C

L1116606-01,02,03,04,05,06,07,08,09,10,11,12

L1116662-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1116662-06 07/16/19 15:32 • (MS) R3431373-1 07/16/19 15:52 • (MSD) R3431373-2 07/16/19 17:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.666	ND	0.365	0.361	54.8	54.2	2	18.0-120			1.10	32
Acenaphthylene	0.666	ND	0.362	0.366	54.4	55.0	2	25.0-120			1.10	32
Acetophenone	0.666	ND	0.331	0.363	49.7	54.5	2	10.0-120			9.22	37
Anthracene	0.666	ND	0.426	0.407	64.0	61.1	2	22.0-120			4.56	29
Atrazine	0.666	ND	0.407	0.407	61.1	61.1	2	20.0-131			0.000	28
Benzaldehyde	0.666	ND	0.444	0.513	66.7	77.0	2	10.0-160			14.4	40
Benzo(a)anthracene	0.666	0.220	0.653	0.550	65.0	49.5	2	25.0-120			17.1	29
Benzo(b)fluoranthene	0.666	0.341	0.748	0.614	61.1	41.0	2	19.0-122			19.7	31
Benzo(k)fluoranthene	0.666	0.120	0.539	0.508	62.9	58.3	2	23.0-120			5.92	30
Benzo(g,h,i)perylene	0.666	0.152	0.567	0.505	62.3	53.0	2	10.0-120			11.6	33
Benzo(a)pyrene	0.666	0.236	0.623	0.536	58.1	45.0	2	24.0-120			15.0	30
Biphenyl	0.666	ND	0.345	0.353	51.8	53.0	2	15.0-120			2.29	33
Bis(2-chlorethoxy)methane	0.666	ND	0.288	0.292	43.2	43.8	2	10.0-120			1.38	34
Bis(2-chloroethyl)ether	0.666	ND	0.348	0.363	52.3	54.5	2	10.0-120			4.22	40
Bis(2-chloroisopropyl)ether	0.666	ND	0.301	0.321	45.2	48.2	2	10.0-120			6.43	40
4-Bromophenyl-phenylether	0.666	ND	0.386	0.404	58.0	60.7	2	27.0-120			4.56	30
Caprolactam	0.666	ND	0.390	0.407	58.6	61.1	2	11.0-141			4.27	31
Carbazole	0.666	ND	0.458	0.439	64.0	61.2	2	31.0-120			4.24	24
4-Chloroaniline	0.666	ND	0.270	0.305	40.5	45.8	2	10.0-120			12.2	36
2-Chloronaphthalene	0.666	ND	0.349	0.363	52.4	54.5	2	20.0-120			3.93	32
4-Chlorophenyl-phenylether	0.666	ND	0.386	0.386	58.0	58.0	2	24.0-120			0.000	29
Chrysene	0.666	0.259	0.682	0.572	63.5	47.0	2	21.0-120			17.5	29
Dibenz(a,h)anthracene	0.666	ND	0.431	0.430	64.7	64.6	2	10.0-120			0.232	32
Dibenzofuran	0.666	ND	0.377	0.371	56.6	55.7	2	24.0-120			1.60	30
3,3-Dichlorobenzidine	1.33	ND	0.630	0.624	47.4	46.9	2	10.0-120			0.957	34
2,4-Dinitrotoluene	0.666	ND	0.387	0.387	58.1	58.1	2	30.0-120			0.000	31
2,6-Dinitrotoluene	0.666	ND	0.376	0.376	56.5	56.5	2	25.0-120			0.000	31
Fluoranthene	0.666	0.419	0.955	0.645	80.5	33.9	2	18.0-126		J3	38.8	32
Fluorene	0.666	ND	0.395	0.387	59.3	58.1	2	25.0-120			2.05	30
Hexachlorobenzene	0.666	ND	0.398	0.403	59.8	60.5	2	27.0-120			1.25	28
Hexachloro-1,3-butadiene	0.666	ND	0.316	0.317	47.4	47.6	2	10.0-120			0.316	38
Hexachlorocyclopentadiene	0.666	ND	0.159	0.176	23.9	26.4	2	10.0-120			10.1	40
Hexachloroethane	0.666	ND	0.300	0.309	45.0	46.4	2	10.0-120			2.96	40
Indeno(1,2,3-cd)pyrene	0.666	0.183	0.582	0.508	59.9	48.8	2	10.0-120			13.6	32
Isophorone	0.666	ND	0.290	0.299	43.5	44.9	2	13.0-120			3.06	34
2-Methylnaphthalene	0.666	ND	0.298	0.305	44.7	45.8	2	10.0-120			2.32	37
Naphthalene	0.666	ND	0.300	0.307	45.0	46.1	2	10.0-120			2.31	35
2-Nitroaniline	0.666	ND	0.381	0.387	57.2	58.1	2	24.0-120			1.56	30
3-Nitroaniline	0.666	ND	0.356	0.358	53.5	53.8	2	11.0-120			0.560	32
4-Nitroaniline	0.666	ND	0.352	0.327	52.9	49.1	2	15.0-120			7.36	31

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Semi Volatile Organic Compounds (GC/MS) by Method 8270C

L1116606-01,02,03,04,05,06,07,08,09,10,11,12

L1116662-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1116662-06 07/16/19 15:32 • (MS) R3431373-1 07/16/19 15:52 • (MSD) R3431373-2 07/16/19 17:29

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrobenzene	0.666	ND	0.292	0.290	43.8	43.5	2	10.0-120			0.687	36
n-Nitrosodiphenylamine	0.666	ND	0.387	0.392	58.1	58.9	2	17.0-120			1.28	29
n-Nitrosodi-n-propylamine	0.666	ND	0.315	0.337	47.3	50.6	2	10.0-120			6.75	37
Phenanthrene	0.666	0.153	0.650	0.480	74.6	49.1	2	17.0-120			30.1	31
Benzylbutyl phthalate	0.666	ND	0.423	0.437	63.5	65.6	2	23.0-120			3.26	30
Bis(2-ethylhexyl)phthalate	0.666	ND	0.426	0.676	64.0	102	2	17.0-126		J3	45.4	30
Di-n-butyl phthalate	0.666	ND	0.419	0.421	62.9	63.2	2	30.0-120			0.476	29
Diethyl phthalate	0.666	ND	0.384	0.389	57.7	58.4	2	26.0-120			1.29	28
Dimethyl phthalate	0.666	ND	0.363	0.372	54.5	55.9	2	25.0-120			2.45	29
Di-n-octyl phthalate	0.666	ND	0.420	0.433	63.1	65.0	2	21.0-123			3.05	29
Pyrene	0.666	0.363	0.851	0.616	73.3	38.0	2	16.0-121			32.0	32
4-Chloro-3-methylphenol	0.666	ND	0.347	0.372	52.1	55.9	2	15.0-120			6.95	30
2-Chlorophenol	0.666	ND	0.348	0.372	52.3	55.9	2	15.0-120			6.67	37
2-Methylphenol	0.666	ND	0.538	0.590	80.8	88.6	2	11.0-120			9.22	40
3&4-Methyl Phenol	0.666	ND	0.436	0.458	65.5	68.8	2	12.0-123			4.92	38
2,4-Dichlorophenol	0.666	ND	0.346	0.345	52.0	51.8	2	20.0-120			0.289	31
2,4-Dimethylphenol	0.666	ND	0.300	0.319	45.0	47.9	2	10.0-120			6.14	33
4,6-Dinitro-2-methylphenol	0.666	ND	ND	0.268	0.000	40.2	2	10.0-120	J6	J3	200	39
2,4-Dinitrophenol	0.666	ND	ND	0.209	0.000	31.4	2	10.0-121	J6	J3	200	40
2-Nitrophenol	0.666	ND	0.319	0.319	47.9	47.9	2	12.0-120			0.000	39
4-Nitrophenol	0.666	ND	0.362	0.366	54.4	55.0	2	10.0-137			1.10	32
Pentachlorophenol	0.666	ND	0.141	0.233	21.2	35.0	2	10.0-160		J3	49.2	31
Phenol	0.666	ND	0.396	0.430	59.5	64.6	2	12.0-120			8.23	38
1,2,4,5-Tetrachlorobenzene	0.666	ND	0.363	0.382	54.5	57.4	2	14.0-120			5.10	36
2,4,5-Trichlorophenol	0.666	ND	0.459	0.465	68.9	69.8	2	20.0-120			1.30	30
2,4,6-Trichlorophenol	0.666	ND	0.372	0.379	55.9	56.9	2	19.0-120			1.86	32
(S) Nitrobenzene-d5					*58.0*	*57.7*		*10.0-122*				
(S) 2-Fluorobiphenyl					*55.0*	*51.4*		*15.0-120*				
(S) p-Terphenyl-d14					*66.7*	*64.3*		*10.0-120*				
(S) Phenol-d5					*55.5*	*55.6*		*10.0-120*				
(S) 2-Fluorophenol					*64.3*	*62.5*		*12.0-120*				
(S) 2,4,6-Tribromophenol					*65.2*	*64.6*		*10.0-127*				

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GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.

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ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1907197
Pace Project No.: 30312550

Sample: 1907197-001C 90701-C1V-01 **Lab ID: 30312550001** Collected: 07/01/19 17:37 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**2.390 ± 0.425 (0.187) C:NA T:NA**	pCi/g	08/06/19 11:35	13982-63-3	Ra
Radium-228	EPA 901.1	**1.108 ± 0.411 (0.316) C:NA T:NA**	pCi/g	08/06/19 11:35	15262-20-1	

Sample: 1907197-002C 90701-C1V-02 **Lab ID: 30312550002** Collected: 07/01/19 17:45 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.993 ± 0.284 (0.184) C:NA T:NA**	pCi/g	08/06/19 13:01	13982-63-3	Ra
Radium-228	EPA 901.1	**0.303 ± 0.408 (0.527) C:NA T:NA**	pCi/g	08/06/19 13:01	15262-20-1	

Sample: 1907197-003C 90701-C1V-03 **Lab ID: 30312550003** Collected: 07/01/19 17:55 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.501 ± 0.188 (0.179) C:NA T:NA**	pCi/g	08/06/19 11:36	13982-63-3	Ra
Radium-228	EPA 901.1	**0.667 ± 0.333 (0.468) C:NA T:NA**	pCi/g	08/06/19 11:36	15262-20-1	

Sample: 1907197-004C 90701-C1V-04 **Lab ID: 30312550004** Collected: 07/01/19 18:05 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**1.886 ± 0.376 (0.210) C:NA T:NA**	pCi/g	08/06/19 11:52	13982-63-3	Ra
Radium-228	EPA 901.1	**0.969 ± 0.379 (0.324) C:NA T:NA**	pCi/g	08/06/19 11:52	15262-20-1	

Sample: 1907197-005C 90701-C2NV-01 **Lab ID: 30312550005** Collected: 07/01/19 16:56 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**1.232 ± 0.280 (0.260) C:NA T:NA**	pCi/g	08/06/19 11:52	13982-63-3	Ra

REPORT OF LABORATORY ANALYSIS

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www.pacelabs.com

Pace Analytical Services, LLC
1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1907197
Pace Project No.: 30312550

Sample: 1907197-005C 90701-C2NV-01 **Lab ID: 30312550005** Collected: 07/01/19 16:56 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-228	EPA 901.1	**1.186 ± 0.557 (0.585) C:NA T:NA**	pCi/g	08/06/19 11:52	15262-20-1	

Sample: 1907197-006C 90701-C2NV-02 **Lab ID: 30312550006** Collected: 07/01/19 17:06 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**2.016 ± 0.394 (0.223) C:NA T:NA**	pCi/g	08/06/19 12:08	13982-63-3	Ra
Radium-228	EPA 901.1	**1.122 ± 0.422 (0.355) C:NA T:NA**	pCi/g	08/06/19 12:08	15262-20-1	

Sample: 1907197-007C 90701-C2NV-03 **Lab ID: 30312550007** Collected: 07/01/19 17:14 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.872 ± 0.266 (0.207) C:NA T:NA**	pCi/g	08/06/19 12:09	13982-63-3	Ra
Radium-228	EPA 901.1	**1.313 ± 0.381 (0.531) C:NA T:NA**	pCi/g	08/06/19 12:09	15262-20-1	

Sample: 1907197-008C 90701-C2NV-04 **Lab ID: 30312550008** Collected: 07/01/19 17:23 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**1.447 ± 0.332 (0.281) C:NA T:NA**	pCi/g	08/06/19 12:26	13982-63-3	Ra
Radium-228	EPA 901.1	**1.213 ± 0.357 (0.288) C:NA T:NA**	pCi/g	08/06/19 12:26	15262-20-1	

Sample: 1907197-009C 90701-C2SV-01 **Lab ID: 30312550009** Collected: 07/01/19 16:19 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.482 ± 0.173 (0.164) C:NA T:NA**	pCi/g	08/06/19 12:27	13982-63-3	Ra
Radium-228	EPA 901.1	**0.884 ± 0.363 (0.270) C:NA T:NA**	pCi/g	08/06/19 12:27	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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1638 Roseytown Road - Suites 2,3,4
Greensburg, PA 15601
(724)850-5600

ANALYTICAL RESULTS - RADIOCHEMISTRY

Project: 1907197
Pace Project No.: 30312550

Sample: 1907197-010C 90701-C2SV-02 **Lab ID: 30312550010** Collected: 07/01/19 16:29 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**1.281 ± 0.320 (0.193) C:NA T:NA**	pCi/g	08/06/19 12:44	13982-63-3	Ra
Radium-228	EPA 901.1	**0.837 ± 0.487 (0.607) C:NA T:NA**	pCi/g	08/06/19 12:44	15262-20-1	

Sample: 1907197-011C 90701-C2SV-03 **Lab ID: 30312550011** Collected: 07/01/19 16:37 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.919 ± 0.245 (0.166) C:NA T:NA**	pCi/g	08/06/19 13:17	13982-63-3	Ra
Radium-228	EPA 901.1	**1.242 ± 0.334 (0.199) C:NA T:NA**	pCi/g	08/06/19 13:17	15262-20-1	

Sample: 1907197-012C 90701-C2SV-04 **Lab ID: 30312550012** Collected: 07/01/19 16:47 Received: 07/09/19 09:40 Matrix: Solid
PWS: Site ID: Sample Type:

Results reported on a "dry-weight" basis

Parameters	Method	Act ± Unc (MDC) Carr Trac	Units	Analyzed	CAS No.	Qual
Radium-226	EPA 901.1	**0.929 ± 0.194 (0.210) C:NA T:NA**	pCi/g	08/06/19 12:45	13982-63-3	Ra
Radium-228	EPA 901.1	**1.202 ± 0.362 (0.273) C:NA T:NA**	pCi/g	08/06/19 12:45	15262-20-1	

REPORT OF LABORATORY ANALYSIS

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(724)850-5600

QUALITY CONTROL - RADIOCHEMISTRY

Project: 1907197
Pace Project No.: 30312550

QC Batch: 352759 Analysis Method: EPA 901.1
QC Batch Method: EPA 901.1 Analysis Description: 901.1 Gamma Spec Ingrowth
Associated Lab Samples: 30312550001, 30312550002, 30312550003, 30312550004, 30312550005, 30312550006, 30312550007, 30312550008, 30312550009, 30312550010, 30312550011, 30312550012

METHOD BLANK: 1713961 Matrix: Solid
Associated Lab Samples: 30312550001, 30312550002, 30312550003, 30312550004, 30312550005, 30312550006, 30312550007, 30312550008, 30312550009, 30312550010, 30312550011, 30312550012

Parameter	Act ± Unc (MDC) Carr Trac	Units	Analyzed	Qualifiers
Radium-226	0.051 ± 0.113 (0.121) C:NA T:NA	pCi/g	07/26/19 13:07	Ra
Radium-228	0.054 ± 0.117 (0.134) C:NA T:NA	pCi/g	07/26/19 13:07	

Results presented on this page are in the units indicated by the "Units" column except where an alternate unit is presented to the right of the result.

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QUALIFIERS

Project: 1907197
Pace Project No.: 30312550

DEFINITIONS

DF - Dilution Factor, if reported, represents the factor applied to the reported data due to dilution of the sample aliquot.

ND - Not Detected at or above adjusted reporting limit.

TNTC - Too Numerous To Count

J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.

MDL - Adjusted Method Detection Limit.

PQL - Practical Quantitation Limit.

RL - Reporting Limit - The lowest concentration value that meets project requirements for quantitative data with known precision and bias for a specific analyte in a specific matrix.

S - Surrogate

1,2-Diphenylhydrazine decomposes to and cannot be separated from Azobenzene using Method 8270. The result for each analyte is a combined concentration.

Consistent with EPA guidelines, unrounded data are displayed and have been used to calculate % recovery and RPD values.

LCS(D) - Laboratory Control Sample (Duplicate)

MS(D) - Matrix Spike (Duplicate)

DUP - Sample Duplicate

RPD - Relative Percent Difference

NC - Not Calculable.

SG - Silica Gel - Clean-Up

U - Indicates the compound was analyzed for, but not detected.

N-Nitrosodiphenylamine decomposes and cannot be separated from Diphenylamine using Method 8270. The result reported for each analyte is a combined concentration.

Act - Activity

Unc - Uncertainty: For Safe Drinking Water Act (SDWA) analyses, the reported Unc. is the calculated Count Uncertainty (95% confidence interval) using a coverage factor of 1.96. For all other matrices (non-SDWA), the reported Unc. is the calculated Expanded Uncertainty (aka Combined Standard Uncertainty, CSU), reported at the 95% confidence interval using a coverage factor of 1.96.
Gamma Spec: The Unc. reported for all gamma-spectroscopy analyses (EPA 901.1), is the calculated Expanded Uncertainty (CSU) at the 95.4% confidence interval, using a coverage factor of 2.0.

(MDC) - Minimum Detectable Concentration

Trac - Tracer Recovery (%)

Carr - Carrier Recovery (%)

Pace Analytical is TNI accredited. Contact your Pace PM for the current list of accredited analytes.

TNI - The NELAC Institute.

ANALYTE QUALIFIERS

Ra The reported Ra-226 results were determined by hermetically sealing the dried, processed sample in an appropriate-sized can. Each sample was stored for a minimum of 21 days to ensure that equilibrium between Ra-226 and daughters Bi-214 and Pb-214 was achieved. Reported Ra-226 results were inferred from gamma peaks attributable to Bi-214 and Pb-214.

REPORT OF LABORATORY ANALYSIS

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QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **1907197-001AMS** SampType: **MS** TestCode: **EPA Method 300.0: Anions**
Client ID: **190701-C1V-01** Batch ID: **46203** RunNo: **61410**
Prep Date: **7/16/2019** Analysis Date: **7/16/2019** SeqNo: **2082547** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	6.0	1.5	1.500	5.356	46.0	15	138			
Nitrogen, Nitrite (As N)	3.2	1.5	3.000	0.4353	91.9	69.5	116			
Nitrogen, Nitrate (As N)	9.5	1.5	7.500	2.484	93.1	54.8	141			

Sample ID: **1907197-001AMSD** SampType: **MSD** TestCode: **EPA Method 300.0: Anions**
Client ID: **190701-C1V-01** Batch ID: **46203** RunNo: **61410**
Prep Date: **7/16/2019** Analysis Date: **7/16/2019** SeqNo: **2082548** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	5.7	1.5	1.500	5.356	24.9	15	138	5.37	20	
Nitrogen, Nitrite (As N)	3.2	1.5	3.000	0.4353	92.9	69.5	116	0.933	20	
Nitrogen, Nitrate (As N)	9.5	1.5	7.500	2.484	93.3	54.8	141	0.121	20	

Sample ID: **MB-46203** SampType: **MBLK** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **46203** RunNo: **61410**
Prep Date: **7/16/2019** Analysis Date: **7/16/2019** SeqNo: **2082563** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID: **LCS-46203** SampType: **LCS** TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS** Batch ID: **46203** RunNo: **61410**
Prep Date: **7/16/2019** Analysis Date: **7/16/2019** SeqNo: **2082564** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	102	90	110			
Chloride	14	1.5	15.00	0	93.7	90	110			
Nitrogen, Nitrite (As N)	2.8	0.30	3.000	0	95.0	90	110			
Nitrogen, Nitrate (As N)	7.4	0.30	7.500	0	98.6	90	110			
Sulfate	29	1.5	30.00	0	96.7	90	110			

Sample ID: **MB-46214** SampType: **mblk** TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS** Batch ID: **46214** RunNo: **61409**
Prep Date: **7/16/2019** Analysis Date: **7/16/2019** SeqNo: **2082660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**

07-Aug-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46214**	SampType: **mblk**	TestCode: **EPA Method 300.0: Anions**
Client ID: **PBS**	Batch ID: **46214**	RunNo: **61409**
Prep Date: **7/16/2019**	Analysis Date: **7/16/2019**	SeqNo: **2082660** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	ND	0.30								
Chloride	ND	1.5								
Nitrogen, Nitrite (As N)	ND	0.30								
Nitrogen, Nitrate (As N)	ND	0.30								
Sulfate	ND	1.5								

Sample ID: **LCS-46214**	SampType: **lcs**	TestCode: **EPA Method 300.0: Anions**
Client ID: **LCSS**	Batch ID: **46214**	RunNo: **61409**
Prep Date: **7/16/2019**	Analysis Date: **7/16/2019**	SeqNo: **2082661** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Fluoride	1.5	0.30	1.500	0	102	90	110			
Chloride	14	1.5	15.00	0	93.8	90	110			
Nitrogen, Nitrite (As N)	2.9	0.30	3.000	0	95.5	90	110			
Nitrogen, Nitrate (As N)	7.5	0.30	7.500	0	99.7	90	110			
Sulfate	30	1.5	30.00	0	98.5	90	110			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**

07-Aug-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46062**	SampType: **MBLK**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **PBS**	Batch ID: **46062**	RunNo: **61261**
Prep Date: **7/9/2019**	Analysis Date: **7/9/2019**	SeqNo: **2076561** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	ND	0.10								

Sample ID: **LCS-46062**	SampType: **LCS**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **LCSS**	Batch ID: **46062**	RunNo: **61261**
Prep Date: **7/9/2019**	Analysis Date: **7/9/2019**	SeqNo: **2076562** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	1.1	0.10	1.000	0	114	70	130			

Sample ID: **1907197-001AMS**	SampType: **MS**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **190701-C1V-01**	Batch ID: **46062**	RunNo: **61261**
Prep Date: **7/9/2019**	Analysis Date: **7/9/2019**	SeqNo: **2076602** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.95	0.092	0.9235	0	103	65	135			

Sample ID: **1907197-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8011/504.1 Modified: EDB**
Client ID: **190701-C1V-01**	Batch ID: **46062**	RunNo: **61261**
Prep Date: **7/9/2019**	Analysis Date: **7/9/2019**	SeqNo: **2076740** Units: **µg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,2-Dibromoethane	0.86	0.094	0.9434	0	91.3	65	135	9.92	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **LCS-46050** SampType: **LCS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS** Batch ID: **46050** RunNo: **61236**
Prep Date: **7/8/2019** Analysis Date: **7/9/2019** SeqNo: **2076762** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	55	10	50.00	0	109	63.9	124			
Surr: DNOP	4.8		5.000		97.0	70	130			

Sample ID: **MB-46050** SampType: **MBLK** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS** Batch ID: **46050** RunNo: **61236**
Prep Date: **7/8/2019** Analysis Date: **7/9/2019** SeqNo: **2076796** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	9.8		10.00		98.4	70	130			

Sample ID: **1907197-001AMS** SampType: **MS** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **190701-C1V-01** Batch ID: **46050** RunNo: **61290**
Prep Date: **7/8/2019** Analysis Date: **7/11/2019** SeqNo: **2079767** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	9.6	48.03	0	107	57	142			
Surr: DNOP	5.0		4.803		104	70	130			

Sample ID: **1907197-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **190701-C1V-01** Batch ID: **46050** RunNo: **61290**
Prep Date: **7/8/2019** Analysis Date: **7/11/2019** SeqNo: **2079768** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	53	9.7	48.31	0	110	57	142	3.40	20	
Surr: DNOP	5.1		4.831		105	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**

07-Aug-19

Client: Rule Engineering LLC

Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46033** SampType: **MBLK** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **PBS** Batch ID: **46033** RunNo: **61190**

Prep Date: **7/6/2019** Analysis Date: **7/7/2019** SeqNo: **2074060** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		110	73.8	119			

Sample ID: **LCS-46033** SampType: **LCS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **LCSS** Batch ID: **46033** RunNo: **61190**

Prep Date: **7/6/2019** Analysis Date: **7/7/2019** SeqNo: **2074061** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	24	5.0	25.00	0	96.1	80.1	123			
Surr: BFB	1200		1000		123	73.8	119			S

Sample ID: **1907197-001AMS** SampType: **MS** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **190701-C1V-01** Batch ID: **46033** RunNo: **61190**

Prep Date: **7/6/2019** Analysis Date: **7/7/2019** SeqNo: **2074063** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.8	24.18	0	109	69.1	142			
Surr: BFB	1200		967.1		123	73.8	119			S

Sample ID: **1907197-001AMSD** SampType: **MSD** TestCode: **EPA Method 8015D: Gasoline Range**

Client ID: **190701-C1V-01** Batch ID: **46033** RunNo: **61190**

Prep Date: **7/6/2019** Analysis Date: **7/7/2019** SeqNo: **2074064** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	28	4.9	24.49	0	116	69.1	142	7.29	20	
Surr: BFB	1300		979.4		132	73.8	119	0	0	S

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46147** SampType: **MBLK** TestCode: **EPA Method 8082A: PCB's**
Client ID: **PBS** Batch ID: **46147** RunNo: **61417**
Prep Date: **7/12/2019** Analysis Date: **7/16/2019** SeqNo: **2081816** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.025								
Aroclor 1221	ND	0.025								
Aroclor 1232	ND	0.025								
Aroclor 1242	ND	0.025								
Aroclor 1248	ND	0.025								
Aroclor 1254	ND	0.025								
Aroclor 1260	ND	0.025								
Surr: Decachlorobiphenyl	0.044		0.06250		69.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.042		0.06250		66.4	32.3	138			

Sample ID: **LCS-46147** SampType: **LCS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **LCSS** Batch ID: **46147** RunNo: **61417**
Prep Date: **7/12/2019** Analysis Date: **7/16/2019** SeqNo: **2081817** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.11	0.025	0.1250	0	90.1	32	156			
Aroclor 1260	0.072	0.025	0.1250	0	57.3	32.2	111			
Surr: Decachlorobiphenyl	0.040		0.06250		63.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.038		0.06250		60.0	32.3	138			

Sample ID: **1907197-004AMS** SampType: **MS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C1V-04** Batch ID: **46147** RunNo: **61417**
Prep Date: **7/12/2019** Analysis Date: **7/16/2019** SeqNo: **2081819** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.087	0.023	0.1162	0	75.2	33.5	145			
Aroclor 1260	0.074	0.023	0.1162	0	63.3	39.1	160			
Surr: Decachlorobiphenyl	0.038		0.05811		65.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.033		0.05811		57.6	32.3	138			

Sample ID: **1907197-004AMSD** SampType: **MSD** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C1V-04** Batch ID: **46147** RunNo: **61417**
Prep Date: **7/12/2019** Analysis Date: **7/16/2019** SeqNo: **2081820** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.099	0.024	0.1184	0	83.8	33.5	145	12.7	36.6	
Aroclor 1260	0.070	0.024	0.1184	0	59.0	39.1	160	5.06	39	
Surr: Decachlorobiphenyl	0.037		0.05921		62.8	25.7	135	0	0	
Surr: Tetrachloro-m-xylene	0.034		0.05921		57.2	32.3	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46092** SampType: **MBLK** TestCode: **EPA Method 8082A: PCB's**
Client ID: **PBS** Batch ID: **46092** RunNo: **61417**
Prep Date: **7/10/2019** Analysis Date: **7/16/2019** SeqNo: **2081830** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.025								
Aroclor 1221	ND	0.025								
Aroclor 1232	ND	0.025								
Aroclor 1242	ND	0.025								
Aroclor 1248	ND	0.025								
Aroclor 1254	ND	0.025								
Aroclor 1260	ND	0.025								
Surr: Decachlorobiphenyl	0.037		0.06250		59.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.038		0.06250		61.6	32.3	138			

Sample ID: **LCS-46092** SampType: **LCS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **LCSS** Batch ID: **46092** RunNo: **61417**
Prep Date: **7/10/2019** Analysis Date: **7/16/2019** SeqNo: **2081831** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.11	0.025	0.1250	0	90.6	32	156			
Aroclor 1260	0.077	0.025	0.1250	0	61.9	32.2	111			
Surr: Decachlorobiphenyl	0.044		0.06250		69.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.049		0.06250		78.0	32.3	138			

Sample ID: **1907197-001AMS** SampType: **MS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C1V-01** Batch ID: **46092** RunNo: **61417**
Prep Date: **7/10/2019** Analysis Date: **7/16/2019** SeqNo: **2081833** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.065	0.023	0.1163	0	56.2	33.5	145			
Aroclor 1260	0.067	0.023	0.1163	0	57.2	39.1	160			
Surr: Decachlorobiphenyl	0.038		0.05814		64.8	25.7	135			
Surr: Tetrachloro-m-xylene	0.038		0.05814		66.0	32.3	138			

Sample ID: **1907197-001AMSD** SampType: **MSD** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C1V-01** Batch ID: **46092** RunNo: **61417**
Prep Date: **7/10/2019** Analysis Date: **7/16/2019** SeqNo: **2081834** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.074	0.025	0.1239	0	59.3	33.5	145	11.8	36.6	
Aroclor 1260	0.075	0.025	0.1239	0	60.2	39.1	160	11.3	39	
Surr: Decachlorobiphenyl	0.043		0.06197		68.8	25.7	135	0	0	
Surr: Tetrachloro-m-xylene	0.042		0.06197		67.2	32.3	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46172** SampType: **MBLK** TestCode: **EPA Method 8082A: PCB's**
Client ID: **PBS** Batch ID: **46172** RunNo: **61454**
Prep Date: **7/15/2019** Analysis Date: **7/17/2019** SeqNo: **2083181** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	ND	0.025								
Aroclor 1221	ND	0.025								
Aroclor 1232	ND	0.025								
Aroclor 1242	ND	0.025								
Aroclor 1248	ND	0.025								
Aroclor 1254	ND	0.025								
Aroclor 1260	ND	0.025								
Surr: Decachlorobiphenyl	0.047		0.06250		74.8	25.7	135			
Surr: Tetrachloro-m-xylene	0.051		0.06250		81.6	32.3	138			

Sample ID: **LCS-46172** SampType: **LCS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **LCSS** Batch ID: **46172** RunNo: **61454**
Prep Date: **7/15/2019** Analysis Date: **7/17/2019** SeqNo: **2083182** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.13	0.025	0.1250	0	106	32	156			
Aroclor 1260	0.088	0.025	0.1250	0	70.5	32.2	111			
Surr: Decachlorobiphenyl	0.051		0.06250		81.6	25.7	135			
Surr: Tetrachloro-m-xylene	0.050		0.06250		80.4	32.3	138			

Sample ID: **1907197-010AMS** SampType: **MS** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C2SV-02** Batch ID: **46172** RunNo: **61454**
Prep Date: **7/15/2019** Analysis Date: **7/17/2019** SeqNo: **2083184** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.11	0.024	0.1185	0	91.6	33.5	145			
Aroclor 1260	0.082	0.024	0.1185	0	68.8	39.1	160			
Surr: Decachlorobiphenyl	0.047		0.05927		79.2	25.7	135			
Surr: Tetrachloro-m-xylene	0.047		0.05927		78.8	32.3	138			

Sample ID: **1907197-010AMSD** SampType: **MSD** TestCode: **EPA Method 8082A: PCB's**
Client ID: **190701-C2SV-02** Batch ID: **46172** RunNo: **61454**
Prep Date: **7/15/2019** Analysis Date: **7/17/2019** SeqNo: **2083185** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Aroclor 1016	0.096	0.022	0.1113	0	86.5	33.5	145	11.9	36.6	
Aroclor 1260	0.092	0.022	0.1113	0	82.3	39.1	160	11.6	39	
Surr: Decachlorobiphenyl	0.047		0.05565		84.8	25.7	135	0	0	
Surr: Tetrachloro-m-xylene	0.046		0.05565		82.8	32.3	138	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **1907197-001ams** SampType: **MS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **190701-C1V-01** Batch ID: **46033** RunNo: **61296**
Prep Date: **7/6/2019** Analysis Date: **7/10/2019** SeqNo: **2077793** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.89	0.024	0.9671	0	92.3	68.9	131			
Toluene	0.91	0.048	0.9671	0	94.2	64.3	137			
Chlorobenzene	0.92	0.048	0.9671	0	94.9	65.9	143			
1,1-Dichloroethene	0.73	0.048	0.9671	0	75.5	53.4	150			
Trichloroethene (TCE)	0.82	0.048	0.9671	0	84.5	70	130			
Surr: Dibromofluoromethane	0.42		0.4836		87.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.40		0.4836		83.4	70	130			
Surr: Toluene-d8	0.45		0.4836		93.1	70	130			
Surr: 4-Bromofluorobenzene	0.48		0.4836		99.1	70	130			

Sample ID: **1907197-001amsd** SampType: **MSD** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **190701-C1V-01** Batch ID: **46033** RunNo: **61296**
Prep Date: **7/6/2019** Analysis Date: **7/10/2019** SeqNo: **2077794** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9794	0	88.9	68.9	131	2.49	20	
Toluene	0.88	0.049	0.9794	0	89.7	64.3	137	3.68	20	
Chlorobenzene	0.88	0.049	0.9794	0	90.1	65.9	143	3.94	20	
1,1-Dichloroethene	0.72	0.049	0.9794	0	73.4	53.4	150	1.59	20	
Trichloroethene (TCE)	0.80	0.049	0.9794	0	81.9	70	130	1.81	20	
Surr: Dibromofluoromethane	0.42		0.4897		86.1	70	130	0	0	
Surr: 1,2-Dichloroethane-d4	0.39		0.4897		80.1	70	130	0	0	
Surr: Toluene-d8	0.44		0.4897		90.0	70	130	0	0	
Surr: 4-Bromofluorobenzene	0.48		0.4897		97.8	70	130	0	0	

Sample ID: **lcs-46033** SampType: **LCS** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **LCSS** Batch ID: **46033** RunNo: **61296**
Prep Date: **7/6/2019** Analysis Date: **7/10/2019** SeqNo: **2077806** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.025	1.000	0	92.1	70	130			
Toluene	1.0	0.050	1.000	0	101	70	130			
Chlorobenzene	0.99	0.050	1.000	0	98.7	70	130			
1,1-Dichloroethene	0.76	0.050	1.000	0	76.5	50.8	164			
Trichloroethene (TCE)	0.87	0.050	1.000	0	86.5	70	130			
Surr: Dibromofluoromethane	0.41		0.5000		82.2	70	130			
Surr: 1,2-Dichloroethane-d4	0.39		0.5000		79.0	70	130			
Surr: Toluene-d8	0.48		0.5000		96.6	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		101	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **mb-46033** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **46033** RunNo: **61296**
Prep Date: **7/6/2019** Analysis Date: **7/10/2019** SeqNo: **2077807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Methyl tert-butyl ether (MTBE)	ND	0.050								
1,2,4-Trimethylbenzene	ND	0.050								
1,3,5-Trimethylbenzene	ND	0.050								
1,2-Dichloroethane (EDC)	ND	0.050								
1,2-Dibromoethane (EDB)	ND	0.050								
Naphthalene	ND	0.10								
1-Methylnaphthalene	ND	0.20								
2-Methylnaphthalene	ND	0.20								
Acetone	ND	0.75								
Bromobenzene	ND	0.050								
Bromodichloromethane	ND	0.050								
Bromoform	ND	0.050								
Bromomethane	ND	0.15								
2-Butanone	ND	0.50								
Carbon disulfide	ND	0.50								
Carbon tetrachloride	ND	0.050								
Chlorobenzene	ND	0.050								
Chloroethane	ND	0.10								
Chloroform	ND	0.050								
Chloromethane	ND	0.15								
2-Chlorotoluene	ND	0.050								
4-Chlorotoluene	ND	0.050								
cis-1,2-DCE	ND	0.050								
cis-1,3-Dichloropropene	ND	0.050								
1,2-Dibromo-3-chloropropane	ND	0.10								
Dibromochloromethane	ND	0.050								
Dibromomethane	ND	0.050								
1,2-Dichlorobenzene	ND	0.050								
1,3-Dichlorobenzene	ND	0.050								
1,4-Dichlorobenzene	ND	0.050								
Dichlorodifluoromethane	ND	0.050								
1,1-Dichloroethane	ND	0.050								
1,1-Dichloroethene	ND	0.050								
1,2-Dichloropropane	ND	0.050								
1,3-Dichloropropane	ND	0.050								
2,2-Dichloropropane	ND	0.10								

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **mb-46033** SampType: **MBLK** TestCode: **EPA Method 8260B: Volatiles**
Client ID: **PBS** Batch ID: **46033** RunNo: **61296**
Prep Date: **7/6/2019** Analysis Date: **7/10/2019** SeqNo: **2077807** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
1,1-Dichloropropene	ND	0.10								
Hexachlorobutadiene	ND	0.10								
2-Hexanone	ND	0.50								
Isopropylbenzene	ND	0.050								
4-Isopropyltoluene	ND	0.050								
4-Methyl-2-pentanone	ND	0.50								
Methylene chloride	ND	0.15								
n-Butylbenzene	ND	0.15								
n-Propylbenzene	ND	0.050								
sec-Butylbenzene	ND	0.050								
Styrene	ND	0.050								
tert-Butylbenzene	ND	0.050								
1,1,1,2-Tetrachloroethane	ND	0.050								
1,1,2,2-Tetrachloroethane	ND	0.050								
Tetrachloroethene (PCE)	ND	0.050								
trans-1,2-DCE	ND	0.050								
trans-1,3-Dichloropropene	ND	0.050								
1,2,3-Trichlorobenzene	ND	0.10								
1,2,4-Trichlorobenzene	ND	0.050								
1,1,1-Trichloroethane	ND	0.050								
1,1,2-Trichloroethane	ND	0.050								
Trichloroethene (TCE)	ND	0.050								
Trichlorofluoromethane	ND	0.050								
1,2,3-Trichloropropane	ND	0.10								
Vinyl chloride	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: Dibromofluoromethane	0.43		0.5000		86.0	70	130			
Surr: 1,2-Dichloroethane-d4	0.41		0.5000		81.4	70	130			
Surr: Toluene-d8	0.48		0.5000		96.0	70	130			
Surr: 4-Bromofluorobenzene	0.50		0.5000		99.7	70	130			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46114** SampType: **MBLK** TestCode: **EPA Method 8310: PAHs**
Client ID: **PBS** Batch ID: **46114** RunNo: **61494**
Prep Date: **7/11/2019** Analysis Date: **7/19/2019** SeqNo: **2085352** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	ND	0.25								
1-Methylnaphthalene	ND	0.25								
2-Methylnaphthalene	ND	0.25								
Benzo(a)pyrene	ND	0.010								
Surr: Benzo(e)pyrene	0.33		0.5000		65.9	26.5	113			

Sample ID: **LCS-46114** SampType: **LCS** TestCode: **EPA Method 8310: PAHs**
Client ID: **LCSS** Batch ID: **46114** RunNo: **61494**
Prep Date: **7/11/2019** Analysis Date: **7/19/2019** SeqNo: **2085353** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Naphthalene	1.2	0.25	2.000	0	62.1	27.2	80.9			
1-Methylnaphthalene	1.3	0.25	2.000	0	64.6	28.9	83.4			
2-Methylnaphthalene	1.3	0.25	2.000	0	65.4	28.7	83.5			
Benzo(a)pyrene	ND	0.010	0.01250	0	70.0	14.4	105			
Surr: Benzo(e)pyrene	0.41		0.5000		82.6	26.5	113			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46228** SampType: **MBLK** TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS** Batch ID: **46228** RunNo: **61452**
Prep Date: **7/17/2019** Analysis Date: **7/17/2019** SeqNo: **2083664** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033								

Sample ID: **LCS-46228** SampType: **LCS** TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS** Batch ID: **46228** RunNo: **61452**
Prep Date: **7/17/2019** Analysis Date: **7/17/2019** SeqNo: **2083665** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	102	80	120			

Sample ID: **LLLCS-46228** SampType: **LCSLL** TestCode: **EPA Method 7471: Mercury**
Client ID: **BatchQC** Batch ID: **46228** RunNo: **61452**
Prep Date: **7/17/2019** Analysis Date: **7/17/2019** SeqNo: **2083666** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	ND	0.033	0.006660	0	110	70	130			

Sample ID: **1907197-001AMS** SampType: **MS** TestCode: **EPA Method 7471: Mercury**
Client ID: **190701-C1V-01** Batch ID: **46228** RunNo: **61452**
Prep Date: **7/17/2019** Analysis Date: **7/17/2019** SeqNo: **2083668** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.032	0.1613	0.01171	99.8	80	120			

Sample ID: **1907197-001AMSD** SampType: **MSD** TestCode: **EPA Method 7471: Mercury**
Client ID: **190701-C1V-01** Batch ID: **46228** RunNo: **61452**
Prep Date: **7/17/2019** Analysis Date: **7/17/2019** SeqNo: **2083669** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.032	0.1626	0.01171	98.7	80	120	0.317	20	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **MB-46034** SampType: **MBLK** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS** Batch ID: **46034** RunNo: **61197**
Prep Date: **7/6/2019** Analysis Date: **7/8/2019** SeqNo: **2074297** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	ND	2.5								
Arsenic	ND	2.5								
Barium	ND	0.10								
Beryllium	ND	0.15								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Copper	ND	0.30								
Iron	ND	2.5								
Lead	ND	0.25								
Manganese	ND	0.10								
Selenium	ND	2.5								
Silver	ND	0.25								
Thallium	ND	2.5								
Uranium	ND	5.0								
Zinc	ND	2.5								

Sample ID: **LCS-46034** SampType: **LCS** TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS** Batch ID: **46034** RunNo: **61197**
Prep Date: **7/6/2019** Analysis Date: **7/8/2019** SeqNo: **2074298** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Antimony	25	2.5	25.00	0	101	80	120			
Arsenic	25	2.5	25.00	0	101	80	120			
Barium	24	0.10	25.00	0	97.2	80	120			
Beryllium	26	0.15	25.00	0	104	80	120			
Cadmium	25	0.10	25.00	0	100	80	120			
Chromium	25	0.30	25.00	0	99.5	80	120			
Copper	26	0.30	25.00	0	105	80	120			
Iron	27	2.5	25.00	0	106	80	120			
Lead	24	0.25	25.00	0	97.7	80	120			
Manganese	25	0.10	25.00	0	99.9	80	120			
Selenium	25	2.5	25.00	0	98.3	80	120			
Silver	4.9	0.25	5.000	0	98.9	80	120			
Thallium	24	2.5	25.00	0	96.0	80	120			
Uranium	23	5.0	25.00	0	91.4	80	120			
Zinc	25	2.5	25.00	0	100	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.
D	Sample Diluted Due to Matrix
H	Holding times for preparation or analysis exceeded
ND	Not Detected at the Reporting Limit
PQL	Practical Quanitative Limit
S	% Recovery outside of range due to dilution or matrix
B	Analyte detected in the associated Method Blank
E	Value above quantitation range
J	Analyte detected below quantitation limits
P	Sample pH Not In Range
RL	Reporting Limit

QC SUMMARY REPORT
Hall Environmental Analysis Laboratory, Inc.

WO#: **1907197**
07-Aug-19

Client: Rule Engineering LLC
Project: Agua Moss Sunco Landfarm

Sample ID: **1907197-001ADUP**	SampType: **DUP**	TestCode: **EPA Method 9040C**							
Client ID: **190701-C1V-01**	Batch ID: **R61445**	RunNo: **61445**							
Prep Date:	Analysis Date: **7/17/2019**	SeqNo: **2082966**	Units: **pH Units**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	8.03									

Sample ID: **1907197-001ADUP**	SampType: **DUP**	TestCode: **EPA Method 9040C**							
Client ID: **190701-C1V-01**	Batch ID: **R61445**	RunNo: **61445**							
Prep Date:	Analysis Date: **7/17/2019**	SeqNo: **2082968**	Units: **pH Units**						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
pH	7.93									

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
PQL	Practical Quanitative Limit	RL	Reporting Limit
S	% Recovery outside of range due to dilution or matrix		

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
4901 Hawkins NE
Albuquerque, NM 87109
TEL: 505-345-3975 FAX: 505-345-4107
Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1907197** RcptNo: **1**

Received By: **Yazmine Garduno** **7/3/2019 8:12:00 AM**

Completed By: **Leah Baca** **7/3/2019 3:10:58 PM**

Reviewed By: LB 7/3/19

Chain of Custody

1. Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2. How was the sample delivered?	Courier		

Log In

3. Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
4. Were all samples received at a temperature of >0° C to 6.0°C	Yes ☐	No ☑	NA ☐
	Approved by client.		
5. Sample(s) in proper container(s)?	Yes ☑	No ☐	
6. Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
7. Are samples (except VOA and ONG) properly preserved?	Yes ☑	No ☐	
8. Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
9. VOA vials have zero headspace?	Yes ☐	No ☐	No VOA Vials ☑
10. Were any sample containers received broken?	Yes ☐	No ☑	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)	Yes ☑	No ☐	
12. Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
13. Is it clear what analyses were requested?	Yes ☑	No ☐	
14. Were all holding times able to be met? (If no, notify customer for authorization.)	Yes ☑	No ☐	

# of preserved bottles checked for pH: (<2 or >12 unless noted)

Adjusted? N

Checked by: 7.3.19

Special Handling (if applicable)

15. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☑

Person Notified: Date

By Whom: Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

16. Additional remarks:

17. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	4.7	Good	Yes			
2	3.9	Good	Yes			
3	7.8	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering

Mailing Address: 501 Airport Dr, Ste 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

QA/QC Package:
☒ Standard ☐ Level 4 (Full Validation)

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☒ Standard ☐ Rush _____

Project Name: Agua Moss Sunco Landfarm

Project #:

Project Manager: Heather Woods

Sampler: Heather Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 4.3C +0.5CF = 4.7C
3.4 +0.5CF = 3.9C
7.3C +0.5CF = 7.8C

HALL ENVIRONMENTAL ANALYSIS LABORATORY
www.hallenvironmental.com
4901 Hawkins NE - Albuquerque, NM 87109
Tel. 505-345-3975 Fax 505-345-4107

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1907197	BTEX + MTBE + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	See Attached				Air Bubbles (Y or N)
7/1/19	1737	Soil	190701-C1V-01	(4) 4oz Glass	Non	-001	X		X					X				X				
7/1/19	1745	Soil	190701-C1V-02			-002	X		X					X				X				
7/1/19	1755	Soil	190701-C1V-03			-003	X		X					X				X				
7/1/19	1805	Soil	190701-C1V-04			-004	X		X					X				X				
7/1/19	~~1550~~ 1654	Soil	190701-C2NV-01			-005	X		X					X				X				
7/1/19	1706	Soil	190701-C2NV-02			-006	X		X					X				X				
7/1/19	1714	Soil	190701-C2NV-03			-007	X		X					X				X				
7/1/19	1723	Soil	190701-C2NV-04			-008	X		X					X				X				
7/1/19	1619	Soil	190701-C2SV-01			-009	X		X					X				X				
7/1/19	1629	Soil	190701-C2SV-02			-010	X		X					X				X				
7/1/19	1637	Soil	190701-C2SV-03			-011	X		X					X				X				
7/1/19	1647	Soil	190701-C2SV-04			-012	X		X					X				X				

Date:	Time:	Relinquished by:	Received by:	Date	Time
7/2/19	1703	Heather M. Woods	Christine Walters	7/2/19	1703
7/2/19	1814	Christine Walters	Fed Ex carrier	7/3/19	0812

Remarks:
Direct Bill to Agua Moss
Rates per Andy

If necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.

Received by OCD: 9/8/2020 4:34:06 PM

NMAC 20.6.2 - Groundwater standards:

A. Human Health Standards

(1) Numerical Standards

(a) Antimony (Sb) (CAS 7440-36-0).....0.006 mg/l
(b) Arsenic (As) (CAS 7440-38-2).....0.01 mg/l
(c) Barium (Ba) (CAS 7440-39-3).....2 mg/l
(d) Beryllium (be) (CAS 7440-41-7).....0.004 mg/l
(e) Cadmium (Cd) (CAS 7440-43-9).....0.005 mg/l
(f) Chromium (Cr) (CAS 7440-47-3).....0.05 mg/l
(g) Cyanide (CN) (CAS 57-12-5).....0.2 mg/l
(h) Fluoride (F) (CAS 16984-48-8).....1.6 mg/l
(i) Lead (Pb) (CAS 7439-92-1).....0.015 mg/l
(j) Total Mercury (Hg) (CAS 7439-97-6).....0.002 mg/l
(k) Nitrate (NO_3 as N) (CAS 14797-55-8).....10.0 mg/l
(l) Nitrite (NO_2 as N) (CAS 10102-44-0).....1.0 mg/l
(m) Selenium (Se) (CAS 7782-49-2).....0.05 mg/l
(n) Silver (Ag) (CAS 7440-224).....0.05 mg/l
(o) Thallium (Tl) (CAS 7440-28-0).....0.002 mg/l
(p) Uranium (U) (CAS 7440-61-1).....0.03 mg/l
(q) Radioactivity: Combined Radium-226 (CAS 13982-63-3) and Radium-228 (CAS 15262-20-1).....5 pCi/l
(r) Benzene (CAS 71-43-2).....0.005 mg/l
(s) Polychlorinated biphenyls (PCB's) (CAS 1336-36-3).0.0005 mg/l
(t) Toluene (CAS 108-88-3).....1 mg/l
(u) Carbon Tetrachloride (CAS 56-23-5).....0.005 mg/l
(v) 1,2-dichloroethane (EDC) (CAS 107-06-2).....0.005 mg/l
(w) 1,1-dichloroethylene (1,1-DCE) (CAS 75-35-4).....0.007 mg/l
(x) tetrachloroethylene (PCE) (CAS 127-18-4).....0.005 mg/l
(y) trichloroethylene (TCE) (CAS 79-01-6).....0.005 mg/l
(z) ethylbenzene (CAS 100-41-4).....0.7 mg/l
(aa) total xylenes (CAS 1330-20-7).....0.62 mg/l
(bb) methylene chloride (CAS 75-09-2).....0.005 mg/l
(cc) chloroform (CAS 67-66-3).....0.1 mg/l
(dd) 1,1-dichloroethane (CAS 75-34-3).....0.025 mg/l
(ee) ethylene dibromide (EDB) (CAS 106-93-4).....0.00005 mg/l
(ff) 1,1,1-trichloroethane (CAS 71-55-6).....0.2 mg/l
(gg) 1,1,2-trichloroethane (CAS 79-00-5).....0.005 mg/l
(hh) 1,1,2,2-tetrachloroethane (CAS 79-34-5).....0.01 mg/l
(ii) vinyl chloride (CAS 75-01-4).....0.002 mg/l
(jj) PAHs: total naphthalene (CAS 91-20-3) plus monomethylnaphthalenes ...0.03 mg/l
(kk) benzo-a-pyrene (CAS 50-32-8).....0.0002 mg/l
(ll) cis-1,2-dichloroethene (CAS 156-59-2).....0.07 mg/l
(mm) trans-1,2-dichloroethene (CAS 156-60-5).....0.1 mg/l
(nn) 1,2-dichloropropane (PDC) (CAS 78-87-5).....0.005 mg/l
(oo) styrene (CAS 100-42-5).....0.1 mg/l
(pp) 1,2-dichlorobenzene (CAS 95-50-1).....0.6 mg/l
(qq) 1,4-dichlorobenzene (CAS 106-46-7).....0.075 mg/l
(rr) 1,2,4-trichlorobenzene (CAS 120-82-1).....0.07 mg/l
(ss) pentachlorophenol (CAS 87-86-5).....0.001 mg/l
(tt) atrazine (CAS 1912-24-9).....0.003 mg/l

(2) Standards for Toxic Pollutants. A toxic pollutant shall not be present at a concentration shown by credible scientific data and other evidence appropriate under the Water Quality Act, currently available to the public, to have potential for causing one or more of the following effects upon exposure, ingestion, or assimilation either directly from the environment or indirectly by ingestion through food chains: (1) unreasonably threatens to injure human health, or the health of animals or plants which are commonly hatched, bred, cultivated or protected for use by man for food or economic benefit; as used in this definition injuries to health include death, histopathologic change, clinical symptoms of disease, behavioral abnormalities, genetic mutation, physiological malfunctions or physical deformations in such organisms or their offspring; or (2) creates a lifetime risk of more than one cancer per 100,000 exposed persons.

(3) Standards for Non-Aqueous Phase Liquids. Non-aqueous phase liquid shall not be present floating atop of or immersed within ground water, as can be reasonably measured.

B. Other Standards for Domestic Water Supply

(1)	Chloride (Cl) (CAS 16887-00-6)	250.0 mg/l
(2)	Copper (Cu) (CAS 7440-50-8)	1.0 mg/l
(3)	Iron (Fe) (CAS 7439-89-6)	1.0 mg/l
(4)	Manganese (Mn) (CAS 7439-96-5)	0.2 mg/l
(5)	Phenols	0.005 mg/l
(6)	Sulfate (SO_4) (CAS 14808-79-8)	600.0 mg/l
(7)	Total Dissolved Solids (TDS) TDS	1000.0 mg/l
(8)	Zinc (Zn) (CAS 7440-66-6)	10.0 mg/l
(9)	pH	between 6 and 9
(10)	Methyl tertiary-butyl ether (MTBE) (CAS 1634-04-4)	0.1 mg/l

Toxic Pollutant data:

(2) **"toxic pollutant"** means any water contaminant or combination of the water contaminants in the list below

- **(a)** acrolein (CAS 107-02-8)
- **(b)** acrylonitrile (CAS 107-13-1)
- **(c)** benzene and alkylbenzenes
  - **(i)** benzene (CAS 71-43-2)
  - **(ii)** toluene (methylbenzene) (CAS 108-88-3)
  - **(iii)** ethylbenzene (CAS 100-41-4)
  - **(iv)** xylenes (dimethyl benzene isomers): o-xylene (CAS 95-47-6); m-xylene (CAS 108-38-3); and p-xylene (CAS 106-42-3)
  - **(v)** styrene (ethenylbenzene) (CAS 100-42-5)
- **(d)** chlorinated benzenes
  - **(i)** monochlorobenzene (CAS 108-90-7)
  - **(ii)** 1,2-dichlorobenzene (ortho-dichlorobenzene) (CAS 95-50-1)
  - **(iii)** 1,4-dichlorobenzene (para-dichlorobenzene) (CAS 106-46-7)
  - **(iv)** 1,2,4-trichlorobenzene (CAS 120-82-1)
  - **(v)** 1,2,4,5-tetrachlorobenzene (CAS 95-94-3)
  - **(vi)** pentachlorobenzene (CAS 608-93-5)
  - **(vii)** hexachlorobenzene (CAS 118-74-1)
- **(e)** chlorinated phenols
  - **(i)** 2,4-dichlorophenol (CAS 120-83-2)
  - **(ii)** 2,4,5-trichlorophenol (CAS 95-95-4)
  - **(iii)** 2,4,6-trichlorophenol (CAS 88-06-2)
  - **(iv)** pentachlorophenol (PCP) (CAS 87-86-5)
- **(f)** chloroalkyl ethers
  - **(i)** bis (2-chloroethyl) ether (CAS 111-44-4)
  - **(ii)** bis (2-chloroisopropyl) ether (CAS 108-60-1)
  - **(iii)** bis (chloromethyl) ether (CAS 542-88-1)
- **(g)** 1,2-dichloropropane (propylene dichloride, PDC) (CAS 78-87-5)
- **(h)** dichloropropenes (CAS 542-75-6)
- **(i)** 1,4-dioxane (CAS 123-91-1)
- **(j)** halogenated ethanes
  - **(i)** 1,2-dibromoethane (ethylene dibromide, EDB) (CAS 106-93-4)
  - **(ii)** 1,1-dichloroethane (1,1-DCA) (CAS 75-34-3)
  - **(iii)** 1,2-dichloroethane (ethylene dichloride, EDC) (CAS 107-06-2)
  - **(iv)** 1,1,1-trichloroethane (TCA) (CAS 71-55-6)
  - **(v)** 1,1,2-trichloroethane (1,1,2-TCA) (CAS 79-00-5)
  - **(vi)** 1,1,2,2-tetrachloroethane (CAS 79-34-5)
  - **(vii)** hexachloroethane (CAS 67-72-1)
- **(k)** halogenated ethenes
  - **(i)** chlorothene (vinyl chloride) (CAS 75-01-4)
  - **(ii)** 1,1-dichloroethene (1,1-DCE) (CAS 75-35-4)
  - **(iii)** cis-1,2-dichloroethene (cis-1,2-DCE) (CAS 156-59-2)
  - **(iv)** trans-1,2-dichloroethene (trans-1,2-DCE) (CAS 156-60-5)
  - **(v)** trichloroethene (trichloroethylene, TCE) (CAS 79-01-6)
  - **(vi)** tetrachloroethene (perchloroethylene, PCE) (CAS 127-18-4)
- **(l)** halogenated methanes
  - **(i)** bromodichloromethane (CAS 75-27-4)

no of 7/3