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	
District RP	
Facility ID	
Application ID	

Release Notification

Responsible Party

Final Report

Responsible Party Hilcorp Energy	OGRID 372171
Responsible Fully Threoip Energy	OSIGD 372171
Contact Name Clara Cardoza	Contact Telephone 505.564.0733
Contact Hame Clara Cardoza	Contact Telephone 303.304.0733
Contact email ccardoza@hilcorp.com	Incident # (assigned by OCD) nCS1703326324
Contact eman <u>ccardoza@micorp.com</u>	incluent # (assigned by OCD) nCS1/05326324
Contact mailing address 382 CR 3100, Aztec NM 87410	
<i>g</i> , .	

Location of Release Source

Latitude 36.672531

Longitude -108.03214

		Zumuuc	(NAD 83 in deci	mal degrees to 5 deci	mal places)			
Site Name Lu	icerne 1 (P&	A Well)		Site Type	Site Type Gas Well			
Date Release Discovered 1/27/2017				API# (if ap	plicable) 30-045-07579			
Unit Letter	Section	Township	Range	Cou	nty			
M	08	28N	11W	San J				
Surface Owner	r: State	⊠ Federal □ Tr	ibal Private (N		Release			
	Materia	l(s) Released (Select al	l that apply and attach c	alculations or specific	c justification for the volumes provided below)			
Crude Oil		Volume Release	d (bbls)		Volume Recovered (bbls)			
Produced	Water	Volume Release	d (bbls)		Volume Recovered (bbls)			
		Is the concentrate produced water:	ion of dissolved ch >10,000 mg/l?	loride in the	☐ Yes ☐ No			
Condensa	ite	Volume Release	d (bbls) Unknown		Volume Recovered (bbls) 0			
☐ Natural G	ias	Volume Release	d (Mcf)		Volume Recovered (Mcf)			
Other (de	scribe)	Volume/Weight	Released (provide	units)	Volume/Weight Recovered (provide units)			
	ty stripping				a of contamination was discovered. Early assessment also naeological assessment for 100 ft buffer has been			

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State of New Mexico Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Was this a major	If YES, for what reason(s) does the responsible party consider this a major release?
release as defined by 19.15.29.7(A) NMAC?	Historic release
Yes No	Thistoric release
NMOCD (Vanessa Fields	otice given to the OCD? By whom? To whom? When and by what means (phone, email, etc)? by Lisa Hunter on Jan 27, 2017 @ 2:31 p.m. by phone by Lisa Hunter on Jan 27, 2017 @ 2:30 p.m. by phone
	Initial Response
The responsible p	party must undertake the following actions immediately unless they could create a safety hazard that would result in injury
☐ The source of the rele	ease has been stopped.
☐ The impacted area ha	s been secured to protect human health and the environment.
Released materials ha	we been contained via the use of berms or dikes, absorbent pads, or other containment devices.
All free liquids and re	ecoverable materials have been removed and managed appropriately.
If all the actions described	d above have <u>not</u> been undertaken, explain why:
This was a historic release	e and there was no active source at the time of discovery.
has begun, please attach	AC the responsible party may commence remediation immediately after discovery of a release. If remediation a narrative of actions to date. If remedial efforts have been successfully completed or if the release occurred at area (see 19.15.29.11(A)(5)(a) NMAC), please attach all information needed for closure evaluation.
I hereby certify that the infor	rmation given above is true and complete to the best of my knowledge and understand that pursuant to OCD rules and
regulations all operators are public health or the environment failed to adequately investigation	required to report and/or file certain release notifications and perform corrective actions for releases which may endanger nent. The acceptance of a C-141 report by the OCD does not relieve the operator of liability should their operations have atteand remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In f a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws
\wedge	Cardoza Title:Environmental Specialist
Signature:	Date:3/5/2019
email:ccardoza@hilc	orp.com Telephone:505.564.0733
OCD Owler	
OCD Only	
Received by:	Date:

Form C-141 Page 6

State of New Mexico Oil Conservation Division

Closure Report Attachment Checklist: Each of the following items must be included in the closure report.

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

A scaled site and sampling diagram as described in 19.15.29.11	NMAC
Photographs of the remediated site prior to backfill or photos of must be notified 2 days prior to liner inspection)	of the liner integrity if applicable (Note: appropriate OCD District office
☐ Laboratory analyses of final sampling (Note: appropriate ODC	District office must be notified 2 days prior to final sampling)
□ Description of remediation activities	
and regulations all operators are required to report and/or file certain may endanger public health or the environment. The acceptance of a should their operations have failed to adequately investigate and rem human health or the environment. In addition, OCD acceptance of a compliance with any other federal, state, or local laws and/or regulat restore, reclaim, and re-vegetate the impacted surface area to the con accordance with 19.15.29.13 NMAC including notification to the OC	ediate contamination that pose a threat to groundwater, surface water, C-141 report does not relieve the operator of responsibility for ions. The responsible party acknowledges they must substantially ditions that existed prior to the release or their final land use in CD when reclamation and re-vegetation are complete.
	Title: _Environmental Specialist
Signature:email:ccardoza@hilcorp.com	Date:3/5/2019
email:ccardoza@hilcorp.com	Telephone:505.564.0733
OCD Only	
Received by: OCD Via Email	Date: 3/5/19
remediate contamination that poses a threat to groundwater, surface w party of compliance with any other federal, state, or local laws and/o	of liability should their operations have failed to adequately investigate and vater, human health, or the environment nor does not relieve the responsible r regulations.
Closure Approved by:	Date: <u>3/18/19</u>
Printed Name: Cory Smith	Title: Environmental Spec.

Lucerne #1 Release Closure Report

Unit Letter M, Section 8, Township 28 North, Range 11 West San Juan County, New Mexico OCD Incident Number: NCS1703326324

February 8, 2019

Prepared for: Hilcorp Energy Company 382 Road 3100 Aztec, New Mexico 87410

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



Hilcorp Energy Company Lucerne #1 Release Closure Report

Prepared for:

Hilcorp Energy Company 382 Road 3100 Aztec, New Mexico 87410

Prepared by:

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

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

February 8, 2019

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Figure 1 Topographic Site Map

Figure 2 Aerial Site Map

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Appendix A Photograph Log Appendix B Analytical Laboratory Reports



1.0 Introduction

The Hilcorp Energy Company (Hilcorp) Lucerne #1 release site is located in Unit Letter M, Section 8, Township 28 North, Range 11 West, in San Juan County, New Mexico. The historic release was discovered on January 27, 2017, during a facility strip for plugging and abandonment of the well.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

2.0 Remediation Standards Determination

Remediation of the release began under 19.15.29 New Mexico Authority Code (NMAC) Release Notification (filed 12/1/2008), but continued through the transition to 19.15.29 NMAC Releases (filed 8/14/2018). The remediation standards per 19.15.29 NMAC are determined by depth to groundwater with a concentration of less than 10,000 milligrams per kilogram (mg/kg) total dissolved solids (TDS) and several factors outlined in 19.15.29.12(4)(e) NMAC.

Depth to groundwater at the site is estimated to be between 50 and 100 feet below grade surface (bgs) based on the local well records and the area's geology and geomorphology. However, during a site walk with New Mexico Oil Conservation Division (NMOCD) personnel, a small ephemeral wash about 100 feet to the west of the site was determined to be a tributary to a significant watercourse, therefore assigning the release standards of the "less than or equal to 50 feet" category of Table 1, 19.15.29.12 NMAC to the remediation of the impacted soils at the location. These remedial standards are as follows: 600 mg/kg chloride per United States Environmental Protection Agency (USEPA) Method 300.0; 100 mg/kg total petroleum hydrocarbons (TPH) per USEPA Method 8015M; 50 mg/kg total benzene, toluene, ethylbenzene, and xylenes (BTEX) per USEPA Method 8021B or 8260B; and 10 mg/kg benzene per USEPA Method 8021B or 8260B.

3.0 Field Activities

Following assessment activities, excavation of impacted soil and rock began in the northeast portion of the site and continued in a counterclockwise manner around the site through November 20, 2018. Contaminated material was transported to an NMOCD approved landfarm for disposal/remediation. Overburden was continuously monitored for volatile organic compounds (VOCs) with a photo-ionization detector (PID) and for total petroleum hydrocarbons (TPH) using a total hydrocarbon analyzer per U.S. Environmental Protection Agency (USEPA) Method 418.1. Overburden was also sampled for laboratory analysis at approximately 500 cubic yard intervals to confirm benzene, total BTEX, and TPH were below remediation standards.



Following confirmation sampling, the excavation was backfilled with overburden and clean, imported backfill. The disturbed area was then contoured and reseeded according to Bureau of Land Management (BLM) recommendations.

4.0 Confirmation Soil Sampling

Five-point composite samples were collected from all excavation walls and bases. Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8260B and TPH per USEPA 8015M/D. Analysis for chlorides was not needed as chloride concentration results during assessment activities were below laboratory detection limits.

A depiction of the excavation extents with sample locations is included as Figure 2. A photograph log of the confirmation sampling areas after August 14, 2018, is included in Appendix A.

5.0 Laboratory Analytical Results

- Laboratory analytical results for the confirmation samples report benzene concentrations ranging below the laboratory reporting limits to 0.053 mg/kg, which are below the remediation standard of 10 mg/kg.
- Laboratory analytical results report total BTEX concentrations ranging from below laboratory reporting limits to 6.4 mg/kg, which are below the remediation standard of 50 mg/kg.
- Laboratory analytical results report TPH concentrations below the remediation standard of 100 mg/kg, ranging from below laboratory reporting limits to 96 mg/kg for all except five samples. TPH concentrations for samples SC-17R (9/27/17), SC-26 (8/21/17), SC-27R (9/27/17), SC-28 (8/21/17), SC-29 (8/21/17), and SC-31 (8/21/17) range from to 160 mg/kg to 240 mg/kg. In an email from Cory Smith of the NMOCD dated October 10, 2017, the TPH concentrations of these base samples were approved as alternative closure standards.

Laboratory analytical results are summarized in Table 1, confirmation sample locations are illustrated on Figure 2, and the analytical laboratory reports are included in Appendix B.

6.0 Conclusions

Hydrocarbon impacted soils associated with the Lucerne #1 release have been excavated and transported to an approved landfarm for disposal/remediation. Laboratory analytical results for the confirmation samples collected from the excavation report benzene, total BTEX, and TPH concentrations below the remediation standards set forth for the release or at approved alternative closure standards for certain base samples. Therefore, no further work is recommended.



7.0 Closure and Limitations

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



Clara Cardoza

From: Smith, Cory, EMNRD < Cory.Smith@state.nm.us>

Sent: Tuesday, October 10, 2017 1:06 PM

To: Clara Cardoza; Fields, Vanessa, EMNRD; 'whitney thomas (I1thomas@blm.gov)'

Subject: Re: Lucerne 1

Good Afternon Clara,

i am out of the office and i must have forgot to send a response prior to leaving.

I believe HilCorp has already received approval for alternative closure standards for the majority of the base minus SC-17 and SC-27. Based upon the resampling results after further excavation it appears that the contaminates are reducing quickly and the remaining contaminates do not pose a threat to the environment Hilcorp can proceed to back fill in those areas. Side wall samples that are over the limits will need to be further remediation or additional delineation as we discussed.

Thanks

From: Clara Cardoza

Sent: Monday, October 9, 2017 8:17 AM

To: Smith, Cory, EMNRD; Fields, Vanessa, EMNRD; 'whitney thomas (11thomas@blm.gov)'

Subject: RE: Lucerne 1

Good morning. Just wanted to check in with you to see if there has been a decision made for the Lucerne 1 on the

request I made below.

Thank you, Clara

From: Clara Cardoza

Sent: Thursday, September 28, 2017 4:31 PM

To: cory.smith@state.nm.us; Fields, Vanessa, EMNRD; whitney thomas (l1thomas@blm.gov)

Subject: Lucerne 1

Below is a table with lab results for the base of the excavation at the Lucerne 1. This site has been ranked a 20 based on distance to the nearest blue line (drainage). Although some of the TPH levels are above the 100ppm, BTEX is either ND or below the action level, the base is terminated at a hard sandstone, and ground water is not at a shallow depth, nor at risk. Due to BTEX levels below the action level, Hilcorp Energy believes the residual contaminates do not pose a present or foreseeable threat or an environmental risk to water, humans or animals, and requests approval to backfill the excavation in order to continue work (delineation) on the south and west portion of the excavation. Attached are preliminary results from yesterday's confirmation samples for SC-17R and SC-27R. Also for your convenience, attached is the site diagram with additional lab results.

				Ethyleben-	Total	Total	TPH as	TPH as	TPH as
Sample		Benzene	Toluene	zene	Xylenes	BTEX	GRO	DRO	MRO
Name	Date	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
NMOCD A	Action Level	10	NE	NE	NE	50		100	
SC-13	8/21/2017	<0.023	<0.046	<0.046	<0.091	ND	8.4	64	<50
SC-17	8/21/2017	<0.12	< 0.23	0.65	6.6	7.25	190	560	120
SC-17R	9/27/2017	<0.096	0.68	0.51	5.2	6.39	84	99	<47
SC-25	8/21/2017	<0.025	<0.050	<0.050	<0.099	ND	< 5.0	11	<48

SC-26	8/21/2017	<0.024	<0.048	<0.048	<0.097	ND	4.8	150	55
SC-27	8/21/2017	0.60	< 0.25	3.9	37	41.50	530	510	<49
SC-27R	9/27/2017	<0.10	<0.22	0.22	1.9	2.12	30	66	<51
SC-28	8/21/2017	<0.047	<0.094	< 0.094	<0.19	ND	< 9.4	150	56
SC-29	8/21/2017	<0.024	< 0.047	< 0.047	0.28	0.28	<4.7	160	<48
SC-30	8/21/2017	<0.023	<0.046	<0.046	<0.091	ND	<4.6	12	<46
SC-31	8/21/2017	<0.047	<0.094	< 0.094	0.29	0.29	12	180	48

Thank you for your consideration.

Clara M Cardoza

Environmental Specialist

505-564-0733 (O)

505-793-2784 (C)



Please consider the environment before printing this e-mail



Please let this serve as notice that after the remediation at the Lucerne #1 HEC has completed revegetation and this area is no longer needed for oil and gas exploration.

Table



Table 1. Summary of Confirmation Sample Laboratory Analytical Results Hilcorp Energy Company Lucerne #1 San Juan County, New Mexico

						La	aboratory An	alytical Resul	ts		
Sample Name	Date	Laboratory Report Number	Sample Location	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
		NMOCD Closu	ıre Criteria*	10	NE	NE	NE	50		100	
SC-13	8/21/2017	1708C15	Base	<0.023	<0.046	<0.046	<0.091	ND	8.4	64	<50
SC-14	8/21/2017	1708C15	Wall	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.8	<49
SC-16	8/21/2017	1708C15	Wall	< 0.024	<0.048	<0.048	<0.096	ND	<4.8	16	<46
SC-17R	9/27/2017	1709F46	Base	< 0.096	0.68	0.51	5.2	6.4	84	99	<47
SC-22	8/21/2017	1708C15	Wall	<0.025	<0.049	<0.049	<0.098	ND	<4.9	35	<47
SC-23	8/21/2017	1708C15	Wall	<0.024	< 0.047	< 0.047	<0.094	ND	<4.7	27	<48
SC-25	8/21/2017	1708C15	Base	< 0.025	< 0.050	< 0.050	<0.099	ND	<5.0	11	<48
SC-26	8/21/2017	1708C15	Base	<0.024	<0.048	<0.048	<0.097	ND	4.8	150	55
SC-27R	9/27/2017	1709F46	Base	<0.10	<0.20	0.22	1.9	2.1	30	66	<51
SC-28	8/21/2017	1708C15	Base	< 0.047	< 0.094	< 0.094	<0.19	ND	<9.4	150	56
SC-29	8/21/2017	1708C15	Base	<0.024	<0.047	<0.047	0.28	0.28	<4.7	160	<48
SC-30	8/21/2017	1708C15	Base	<0.023	<0.046	<0.046	<0.91	ND	<4.6	12	<46
SC-31	8/21/2017	1708C15	Base	<0.047	<0.094	<0.094	0.29	0.29	12	180	48
SC-35	10/30/2017	1710F60	Wall	<0.020	< 0.039	< 0.039	<0.079	ND	<3.9	<9.3	<46
SC-36	3/23/2018	1803D47	Wall	< 0.023	<0.046	<0.046	<0.093	ND	<4.6	<9.7	<48
SC-37	3/23/2018	1803D47	Wall	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.7	<49
SC-38	3/23/2018	1803D47	Wall	< 0.023	< 0.047	< 0.047	<0.093	ND	<4.7	<10	<50
SC-39	3/23/2018	1803D47	Wall	<0.024	< 0.047	< 0.047	<0.094	ND	<4.7	<9.6	<48
SC-40	3/23/2018	1803D47	Wall	< 0.025	< 0.049	< 0.049	<0.099	ND	<4.9	<9.5	<47
SC-41	3/23/2018	1803D47	Wall	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.5	<48
SC-42	3/23/2018	1803D47	Wall	< 0.023	< 0.047	< 0.047	<0.093	ND	<4.7	<10	<50
SC-43	3/23/2018	1803D47	Wall	<0.024	<0.049	<0.049	<0.097	ND	<4.9	<9.6	<48
SC-44	3/23/2018	1803D47	Wall	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<9.7	<48
SC-45	3/23/2018	1803D47	Wall	<0.023	<0.047	<0.047	<0.094	ND	<4.7	<9.9	<50
SC-46	3/23/2018	1803D47	Base	<0.023	<0.046	<0.046	<0.092	ND	<4.6	<10	<50
SC-47	3/23/2018	1803D47	Base	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.8	<49
SC-48	3/23/2018	1803D47	Base	<0.024	<0.048	<0.048	<0.096	ND	<4.8	<9.6	<48
SC-1	5/29/2018	1805G33	Base	<0.024	<0.048	<0.048	<0.097	ND	<4.8	<9.2	<46

Table 1. Summary of Confirmation Sample Laboratory Analytical Results Hilcorp Energy Company Lucerne #1 San Juan County, New Mexico

						La	aboratory An	alytical Resul	ts		
Sample Name	Date	Laboratory Report Number	Sample Location	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
		NMOCD Closu	ıre Criteria*	10	NE	NE	NE	50		100	
SC-2	5/29/2018	1805G33	Base	<0.024	<0.049	<0.049	<0.098	ND	<4.9	16	<46
SC-3	5/29/2018	1805G33	Base	<0.024	0.11	<0.049	0.12	0.23	<4.9	<9.6	<48
SC-4	5/29/2018	1805G33	Base	< 0.023	< 0.047	< 0.047	< 0.093	ND	<4.7	35	<46
SC-5	5/29/2018	1805G33	Base	<0.025	< 0.049	<0.049	<0.099	ND	<4.9	47	<49
SC-6	5/29/2018	1805G33	Wall	<0.024	< 0.049	< 0.049	<0.098	ND	<4.9	41	<50
SC-7	5/29/2018	1805G33	Wall	<0.023	<0.046	<0.046	<0.093	ND	<4.6	<10	<50
SC-8	5/29/2018	1805G33	Wall	< 0.024	<0.048	<0.048	< 0.095	ND	<4.8	<9.9	<49
SC-9	5/29/2018	1805G33	Wall	<0.023	<0.046	<0.046	<0.092	ND	<4.6	<10	<50
SC-10	5/29/2018	1805G33	Wall	< 0.023	< 0.047	< 0.047	<0.094	ND	<4.7	<9.1	<46
SC-11	5/29/2018	1805G33	Wall	< 0.023	<0.046	<0.046	<0.092	ND	<4.6	15	<50
SC-12	5/29/2018	1805G33	Base	<0.024	< 0.047	< 0.047	<0.095	ND	<4.7	18	<46
SC-13	5/29/2018	1805G33	Wall	<0.024	< 0.049	<0.049	<0.097	ND	<4.9	23	<49
SC-14	5/29/2018	1805G33	Wall	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<9.6	<48
SC-15	5/29/2018	1805G33	Wall	< 0.024	< 0.047	< 0.047	<0.095	ND	<4.7	<9.8	<49
SC-16	5/29/2018	1805G33	Wall	< 0.023	< 0.046	<0.046	< 0.093	ND	<4.6	<9.8	<49
SC-17	5/29/2018	1805G33	Base	< 0.023	<0.046	<0.046	< 0.093	ND	<4.6	<9.7	<48
SC-1	7/12/2018	1807695	Wall	<0.024	<0.048	<0.048	<0.096	ND	<4.8	19	<49
SC-2	7/12/2018	1807695	Wall	< 0.025	< 0.050	< 0.050	0.16	0.16	5.2	13	<50
SC-3 (R)	8/10/2018	1808720	Wall	< 0.085	<0.17	<0.17	<0.34	ND	<17	<9.5	<47
SC-4	7/12/2018	1807688	Wall	<0.019	<0.038	<0.038	< 0.075	ND	<3.8	<10	<50
SC-5	7/12/2018	1807688	Wall	< 0.019	<0.038	<0.038	<0.096	ND	<3.8	<10	<50
SC-6	7/12/2018	1807688	Base	< 0.017	< 0.033	< 0.033	<0.066	ND	<3.3	<9.8	<49
SC-7	7/12/2018	1807688	Wall	< 0.019	<0.038	<0.038	<0.077	ND	<3.8	<9.9	<50
SC-8	8/1/2018	1808105	Base	<0.020	< 0.039	<0.039	<0.079	ND	<3.9	<9.9	<49
SC-9	8/1/2018	1808105	Base	<0.019	< 0.037	< 0.037	<0.074	ND	<3.7	<9.9	<49
SC-10	7/12/2018	1807695	Base	<0.024	<0.047	<0.047	<0.095	ND	<4.7	<10	<50
SC-11 (R)	8/10/2018	1808720	Base	0.052	0.30	0.079	0.89	1.32	22	20	<49
SC-12	8/1/2018	1808125	Base	<0.025	<0.049	<0.049	<0.098	ND	<4.9	16	<49

Table 1. Summary of Confirmation Sample Laboratory Analytical Results Hilcorp Energy Company Lucerne #1 San Juan County, New Mexico

						La	aboratory An	alytical Resul	ts		
Sample Name	Date	Laboratory Report Number	Sample Location	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
		NMOCD Closu	ıre Criteria*	10	NE	NE	NE	50		100	
SC-13	8/1/2018	1808125	Base	<0.024	<0.047	<0.047	<0.095	ND	<4.7	10	<50
SC-17	8/22/2018	1808E15	Wall	<0.019	<0.038	<0.038	<0.075	ND	<3.8	11	<50
SC-18	8/8/2018	1808513	Wall	< 0.017	< 0.034	0.051	0.25	0.30	<3.4	<9.8	<49
SC-19	8/1/2018	1808105	Wall	<0.018	< 0.037	< 0.037	<0.074	ND	<3.7	<9.7	<49
SC-20	8/8/2018	1808513	Base	0.021	<0.038	<0.038	<0.075	0.021	<3.8	<10	<50
SC-21	8/1/2018	1808105	Wall	<0.090	<0.18	<0.18	< 0.36	ND	<18	<9.9	<50
SC-22	8/1/2018	1808105	Wall	<0.018	< 0.037	< 0.037	<0.074	ND	<3.7	<9.9	<49
SC-23	8/1/2018	1808105	Base	<0.018	< 0.036	< 0.036	<0.071	ND	<3.6	<9.9	<49
SC-24	8/8/2018	1808513	Base	< 0.090	<0.18	<0.18	<0.36	ND	<18	<9.6	<48
SC-25 (R)	8/10/2018	1808720	Base	0.030	0.14	< 0.033	0.11	0.28	<3.3	<9.7	<49
Island	8/10/2018	1808720	Wall	< 0.019	< 0.037	< 0.037	<0.075	ND	<3.7	29	<48
SC-26	8/22/2018	1808E48	Base	0.053	0.18	<0.048	0.35	0.58	<4.8	11	<50
SC-27	8/22/2018	1808E48	Base	<0.025	0.082	<0.050	0.11	0.19	<5.0	<9.7	<49
SC-28	8/22/2018	1808E48	Base	< 0.023	< 0.046	<0.046	<0.092	ND	<4.6	<9.6	<48
SC-29	8/22/2018	1808E48	Base	< 0.024	< 0.047	< 0.047	<0.095	ND	<4.7	<9.8	<49
SC-30	9/13/2018	1809830	Base	<0.020	<0.040	<0.040	<0.081	ND	<4.0	<10	<50
SC-31	9/13/2018	1809830	Base	0.019	< 0.036	< 0.036	0.29	0.31	6.0	<10	<50
SC-32	9/13/2018	1809830	Base	0.038	0.15	< 0.039	<0.079	0.19	<3.9	<9.8	<49
SC-33	9/13/2018	1809830	Wall	< 0.019	< 0.039	< 0.039	0.078	0.078	<3.9	<9.8	<49
SC-34	9/25/2018	1809F05	Wall	<0.090	<0.18	<0.18	<0.36	ND	<18	<9.4	<47
SC-35	9/25/2018	1809F05	Base	<0.018	< 0.037	< 0.037	< 0.073	ND	<3.7	<9.8	<49
SC-36	9/25/2018	1809F05	Base	< 0.019	<0.038	<0.038	<0.075	ND	<3.8	<9.3	<46
SC-37	9/25/2018	1809F05	Wall	< 0.019	< 0.039	< 0.039	<0.079	ND	<3.9	<9.7	<49
SC-38R	9/27/2018	1809G88	Base	<0.10	<0.21	<0.21	0.52	0.52	23	54	<50
SC-39	9/25/2018	1809F05	Base	<0.023	<0.046	<0.046	<0.093	ND	<4.6	<9.9	<49
SC-40	9/25/2018	1809F05	Base	0.026	<0.042	<0.042	0.13	0.16	<4.2	<9.8	<49
SC-41	9/25/2018	1809F05	Wall	<0.020	<0.041	<0.041	<0.081	ND	<4.1	<10	<50
SC-38R	11/8/2018	1811502	Base	<0.092	<0.18	<0.18	<0.37	ND	<18	<9.8	<49

Table 1. Summary of Confirmation Sample Laboratory Analytical Results Hilcorp Energy Company Lucerne #1
San Juan County, New Mexico

						La	aboratory An	alytical Resul	ts		
Sample Name	Date	Laboratory Report Number	Sample Location	Benzene (mg/kg)	Toluene (mg/kg)	Ethylben- zene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)	TPH as MRO (mg/kg)
NMOCD Closure Criteria*		10	NE	NE	NE	50		100			
SC-39	10/31/2018	1811004	Base	<0.021	< 0.042	<0.042	<0.085	ND	<4.2	<9.8	<49
SC-40	10/31/2018	1811004	Base	<0.020	<0.040	<0.040	<0.081	ND	<4.0	<9.8	<49
SC-41	10/31/2018	1811004	Base	<0.098	<0.20	<0.20	<0.39	ND	<20	75	<49
SC-42	10/31/2018	1811004	Base	<0.10	<0.20	<0.20	<0.40	ND	<20	65	<50
SC-43	10/31/2018	1811004	Base	<0.021	< 0.042	<0.042	<0.084	ND	<4.2	<9.8	<49
SC-44R	11/8/2018	1811502	Base	<0.088	<0.18	<0.18	< 0.35	ND	<18	12	<48
SC-45	10/31/2018	1811004	Base	<0.11	0.25	<0.21	1.7	2.0	29	51	<48
SC-46	10/31/2018	1811004	Base	<0.11	<0.22	<0.22	<0.45	ND	<22	12	<49
SC-47	11/20/2018	1811B21	Base	<0.093	<0.19	<0.19	<0.37	ND	<19	29	<49
SC-48	11/20/2018	1811B21	Base	< 0.099	<0.20	<0.20	<0.40	ND	<20	16	<49
SC-49	10/31/2018	1811004	Base	<0.021	<0.043	<0.043	<0.085	ND	<4.3	<9.9	<50
SC-50	10/31/2018	1811004	Wall	<0.020	<0.039	<0.039	<0.078	ND	5.2	19	<47
SC-51	11/20/2018	1811B21	Wall	<0.11	<0.22	<0.22	<0.44	ND	<22	<9.9	<49
SC-52	11/20/2018	1811B21	Base	<0.10	<0.20	<0.20	<0.41	ND	<20	<9.8	<49

Notes: ft bgs - feet below grade surface

mg/kg - milligrams per kilogram

NMOCD - New Mexico Oil Conservation Division

NE - not-established

ND - not detected above laboratory reporting limits

BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH - total petroleum hydrocarbons

GRO - gasoline range organics

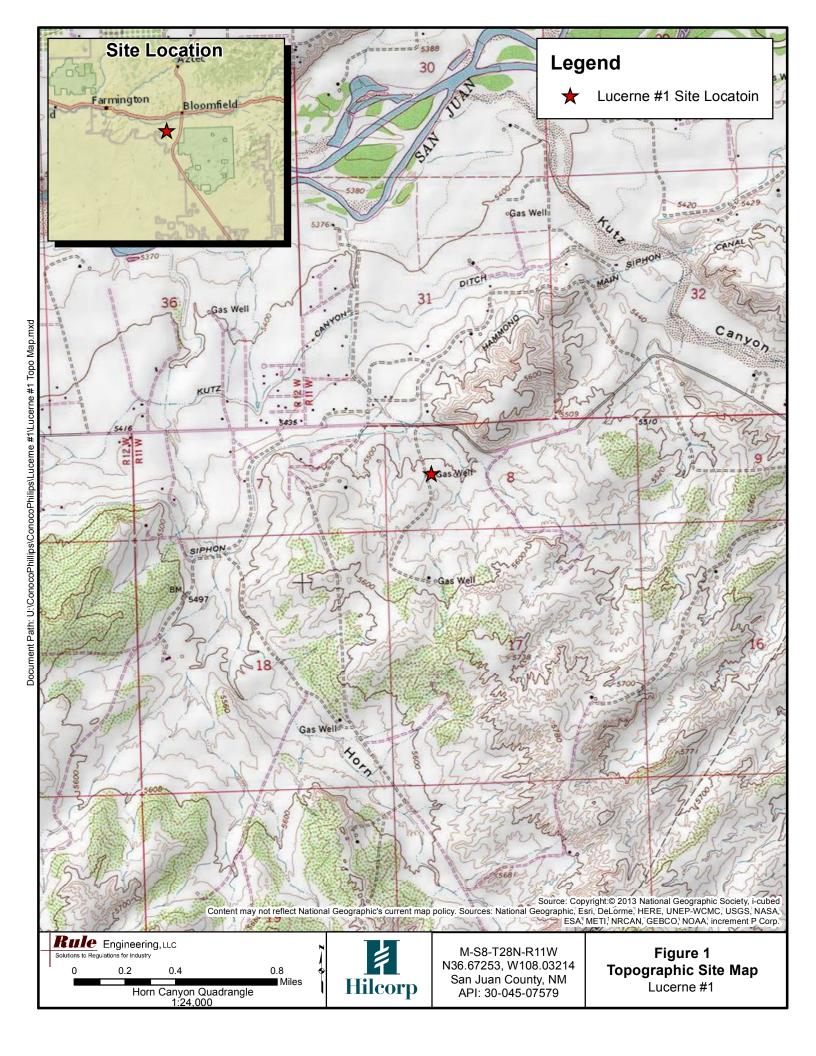
DRO - diesel range organics

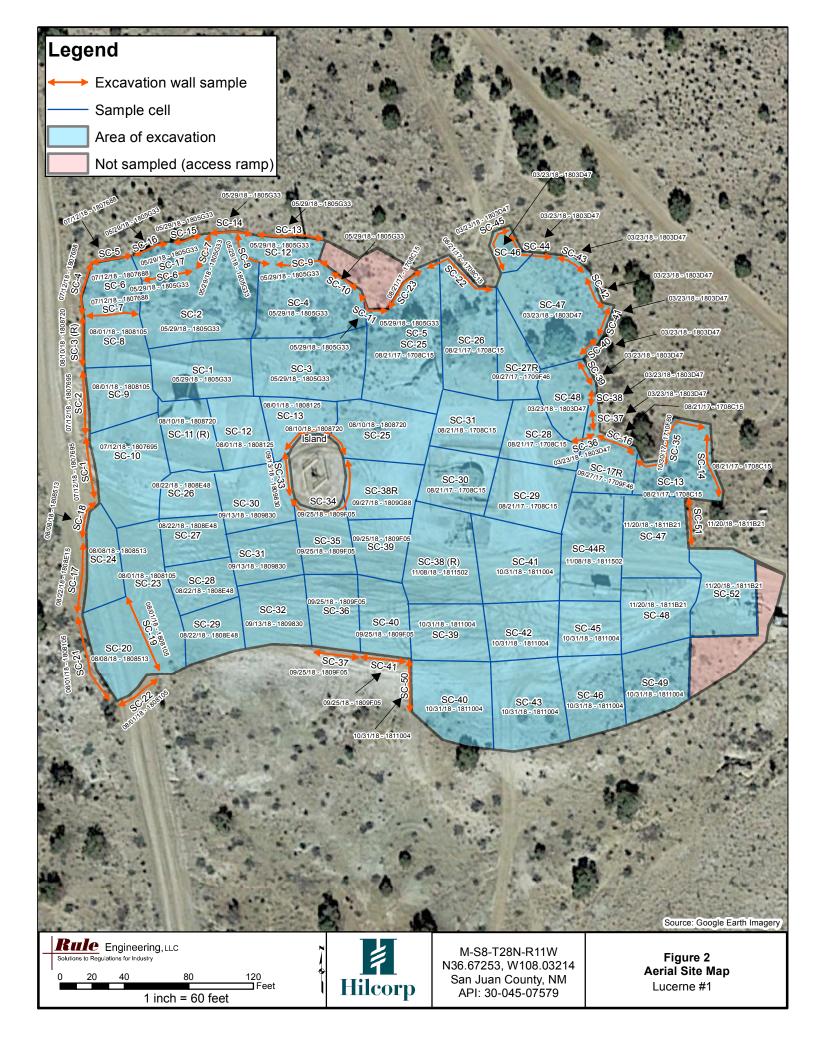
MRO - mineral oil range organics

*Per 19.15.29.12 NMAC Table 1 "depth to groundwater less than or equal to 50 ft bgs"

Figures







Appendix A

Photograph Log





Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: August 28, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-26 (8/22/2018), SC-27 (8/22/2018), SC-28 (8/22/2018), and SC-29 (8/22/2018).



Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: August 27, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-30 (9/13/2018), SC-31 (9/13/2018), SC-32 (9/13/2018), and SC-33 (9/13/2018).

Photograph #3

Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: September 26, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-34 (9/25/2018), SC-35 (9/25/2018), SC-36 (9/25/2018), SC-37 (9/25/2018), SC-38 (9/25/2018), SC-39 (9/25/2018), and SC-40 (9/25/2018), and SC-41 (9/25/2018).



Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: September 27, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-34 (9/25/2018), SC-35 (9/25/2018), SC-36 (9/25/2018), SC-37 (9/25/2018), SC-38 (9/25/2018), SC-39 (9/25/2018), and SC-40 (9/25/2018), and SC-41 (9/25/2018).

Photograph #5

Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: September 26, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-34 (9/25/2018), SC-35 (9/25/2018), SC-36 (9/25/2018), SC-37 (9/25/2018), SC-38 (9/25/2018), SC-39 (9/25/2018), and SC-40 (9/25/2018), and SC-41 (9/25/2018).

Photograph Log Lucerne #1 Hilcorp Energy Company



Photograph #6

Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: September 28, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample area SC-38R (9/27/2018).

Photograph #7

Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: November 1, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-38 (10/31/2018), SC-39 (10/31/2018), SC-40 (10/31/2018), SC-41 (10/31/2018), SC-42 (10/31/2018), SC-43 (10/31/2018), and SC-50 (10/31/2018).



Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: November 1, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-41 (10/31/2018), SC-42 (10/31/2018), SC-43 (10/31/2018), SC-44 (10/31/2018), SC-45 (10/31/2018), SC-46 (10/31/2018), SC-47 (10/31/2018), SC-48 (10/31/2018), SC-49 (10/31/2018), and SC-51 (10/31/2018).

Photograph #9

Client: Hilcorp

Site Name:

Lucerne #1

Date Photo Taken: November 16, 2018

Release Location:

M-8-28N-11W San Juan County, NM



Description: View of final excavation in sample areas SC-47 (11/20/2018), SC-48 (11/20/2018), SC-49 (11/20/2018), SC-51 (11/20/2018), and SC-52 (11/20/2018).

Appendix B Analytical Laboratory Reports





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

August 25, 2017

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: Hilcorp Lucerne #1 OrderNo.: 1708C15

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 19 sample(s) on 8/22/2017 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-13

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 9:51:00 AM

 Lab ID:
 1708C15-001
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual U	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S				Analys	st: TOM
Diesel Range Organics (DRO)	64	10		mg/Kg	1	8/23/2017 10:17:14 AI	M 33491
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/23/2017 10:17:14 Al	M 33491
Surr: DNOP	106	70-130		%Rec	1	8/23/2017 10:17:14 Al	M 33491
EPA METHOD 8015D: GASOLINE RAN	IGE					Analys	st: NSB
Gasoline Range Organics (GRO)	8.4	4.6		mg/Kg	1	8/23/2017 12:47:26 PI	M 33486
Surr: BFB	176	54-150	S	%Rec	1	8/23/2017 12:47:26 PI	M 33486
EPA METHOD 8021B: VOLATILES						Analys	st: NSB
Benzene	ND	0.023		mg/Kg	1	8/23/2017 12:47:26 PI	M 33486
Toluene	ND	0.046		mg/Kg	1	8/23/2017 12:47:26 PI	M 33486
Ethylbenzene	ND	0.046		mg/Kg	1	8/23/2017 12:47:26 PI	M 33486
Xylenes, Total	ND	0.091		mg/Kg	1	8/23/2017 12:47:26 PI	M 33486
Surr: 4-Bromofluorobenzene	115	66.6-132		%Rec	1	8/23/2017 12:47:26 PI	M 33486

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

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 22
	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 **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-14

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 9:55:00 AM

 Lab ID:
 1708C15-002
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	8/23/2017 11:31:46 AM	33491
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/23/2017 11:31:46 AM	33491
Surr: DNOP	105	70-130	%Rec	1	8/23/2017 11:31:46 AM	33491
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	8/23/2017 1:59:34 PM	33486
Surr: BFB	88.6	54-150	%Rec	1	8/23/2017 1:59:34 PM	33486
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 1:59:34 PM	33486
Toluene	ND	0.048	mg/Kg	1	8/23/2017 1:59:34 PM	33486
Ethylbenzene	ND	0.048	mg/Kg	1	8/23/2017 1:59:34 PM	33486
Xylenes, Total	ND	0.097	mg/Kg	1	8/23/2017 1:59:34 PM	33486
Surr: 4-Bromofluorobenzene	114	66.6-132	%Rec	1	8/23/2017 1:59:34 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 2 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Analytical Report Lab Order 1708C15

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-15

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:01:00 AM

 Lab ID:
 1708C15-003
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Un	its	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	S				Analys	t: TOM
Diesel Range Organics (DRO)	230	9.9	mç	g/Kg	1	8/23/2017 11:56:46 AM	1 33491
Motor Oil Range Organics (MRO)	51	49	mg	g/Kg	1	8/23/2017 11:56:46 AM	1 33491
Surr: DNOP	107	70-130	%l	Rec	1	8/23/2017 11:56:46 AM	1 33491
EPA METHOD 8015D: GASOLINE RANG	SE .					Analys	t: NSB
Gasoline Range Organics (GRO)	43	9.9	mç	g/Kg	2	8/23/2017 3:11:51 PM	33486
Surr: BFB	254	54-150	S %l	Rec	2	8/23/2017 3:11:51 PM	33486
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.049	mç	g/Kg	2	8/23/2017 3:11:51 PM	33486
Toluene	ND	0.099	mg	g/Kg	2	8/23/2017 3:11:51 PM	33486
Ethylbenzene	0.10	0.099	mg	g/Kg	2	8/23/2017 3:11:51 PM	33486
Xylenes, Total	0.79	0.20	mç	g/Kg	2	8/23/2017 3:11:51 PM	33486
Surr: 4-Bromofluorobenzene	126	66.6-132	%l	Rec	2	8/23/2017 3:11:51 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 3 of 22 Η Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RLReporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Analytical Report

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-16

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:10:00 AM

 Lab ID:
 1708C15-004
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analys	: TOM
Diesel Range Organics (DRO)	16	9.2	mg/Kg	1	8/23/2017 12:21:39 PM	1 33491
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	8/23/2017 12:21:39 PM	1 33491
Surr: DNOP	107	70-130	%Rec	1	8/23/2017 12:21:39 PM	1 33491
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	8/23/2017 3:35:59 PM	33486
Surr: BFB	88.5	54-150	%Rec	1	8/23/2017 3:35:59 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 3:35:59 PM	33486
Toluene	ND	0.048	mg/Kg	1	8/23/2017 3:35:59 PM	33486
Ethylbenzene	ND	0.048	mg/Kg	1	8/23/2017 3:35:59 PM	33486
Xylenes, Total	ND	0.096	mg/Kg	1	8/23/2017 3:35:59 PM	33486
Surr: 4-Bromofluorobenzene	111	66.6-132	%Rec	1	8/23/2017 3:35:59 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 4 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Removed by excavation -HW

Analytical Report
Lab Order 1708C15

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:14:00 AM

 Lab ID:
 1708C15-005
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	560	9.7	mg/Kg	1	8/23/2017 12:46:42 P	M 33491
Motor Oil Range Organics (MRO)	120	48	mg/Kg	1	8/23/2017 12:46:42 P	M 33491
Surr: DNOP	109	70-130	%Rec	1	8/23/2017 12:46:42 P	M 33491
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	st: NSB
Gasoline Range Organics (GRO)	190	23	mg/Kg	5	8/23/2017 4:00:04 PM	33486
Surr: BFB	297	54-150	S %Rec	5	8/23/2017 4:00:04 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.12	mg/Kg	5	8/23/2017 4:00:04 PM	33486
Toluene	ND	0.23	mg/Kg	5	8/23/2017 4:00:04 PM	33486
Ethylbenzene	0.65	0.23	mg/Kg	5	8/23/2017 4:00:04 PM	33486
Xylenes, Total	6.6	0.46	mg/Kg	5	8/23/2017 4:00:04 PM	33486
Surr: 4-Bromofluorobenzene	128	66.6-132	%Rec	5	8/23/2017 4:00:04 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 5 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

CLIENT: Rule Engineering LLC

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

Client Sample ID: SC-18

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:20:00 AM

 Lab ID:
 1708C15-006
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analyst	: ТОМ
Diesel Range Organics (DRO)	300	9.7	mg/Kg	1	8/23/2017 1:11:39 PM	33491
Motor Oil Range Organics (MRO)	100	48	mg/Kg	1	8/23/2017 1:11:39 PM	33491
Surr: DNOP	104	70-130	%Rec	1	8/23/2017 1:11:39 PM	33491
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	19	9.5	mg/Kg	2	8/23/2017 4:24:09 PM	33486
Surr: BFB	196	54-150	S %Rec	2	8/23/2017 4:24:09 PM	33486
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.047	mg/Kg	2	8/23/2017 4:24:09 PM	33486
Toluene	ND	0.095	mg/Kg	2	8/23/2017 4:24:09 PM	33486
Ethylbenzene	ND	0.095	mg/Kg	2	8/23/2017 4:24:09 PM	33486
Xylenes, Total	ND	0.19	mg/Kg	2	8/23/2017 4:24:09 PM	33486
Surr: 4-Bromofluorobenzene	120	66.6-132	%Rec	2	8/23/2017 4:24:09 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 6 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Analytical Report Lab Order 1708C15

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-19

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:27:00 AM

 Lab ID:
 1708C15-007
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	240	9.5	mg/Kg	1	8/23/2017 1:36:46 PM	33491
Motor Oil Range Organics (MRO)	79	47	mg/Kg	1	8/23/2017 1:36:46 PM	33491
Surr: DNOP	101	70-130	%Rec	1	8/23/2017 1:36:46 PM	33491
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	st: NSB
Gasoline Range Organics (GRO)	7.9	4.7	mg/Kg	1	8/23/2017 4:48:10 PM	33486
Surr: BFB	186	54-150	S %Rec	1	8/23/2017 4:48:10 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 4:48:10 PM	33486
Toluene	ND	0.047	mg/Kg	1	8/23/2017 4:48:10 PM	33486
Ethylbenzene	ND	0.047	mg/Kg	1	8/23/2017 4:48:10 PM	33486
Xylenes, Total	0.10	0.094	mg/Kg	1	8/23/2017 4:48:10 PM	33486
Surr: 4-Bromofluorobenzene	117	66.6-132	%Rec	1	8/23/2017 4:48:10 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 7 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RLReporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Analytical Report Lab Order 1708C15

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-20

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:34:00 AM

 Lab ID:
 1708C15-008
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN	GE ORGANICS	S			Analyst	: TOM
Diesel Range Organics (DRO)	370	10	mg/Kg	1	8/23/2017 2:01:44 PM	33491
Motor Oil Range Organics (MRO)	170	50	mg/Kg	1	8/23/2017 2:01:44 PM	33491
Surr: DNOP	104	70-130	%Rec	1	8/23/2017 2:01:44 PM	33491
EPA METHOD 8015D: GASOLINE RAM	NGE				Analyst	: NSB
Gasoline Range Organics (GRO)	11	9.6	mg/Kg	2	8/23/2017 5:12:09 PM	33486
Surr: BFB	179	54-150	S %Rec	2	8/23/2017 5:12:09 PM	33486
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.048	mg/Kg	2	8/23/2017 5:12:09 PM	33486
Toluene	ND	0.096	mg/Kg	2	8/23/2017 5:12:09 PM	33486
Ethylbenzene	ND	0.096	mg/Kg	2	8/23/2017 5:12:09 PM	33486
Xylenes, Total	0.21	0.19	mg/Kg	2	8/23/2017 5:12:09 PM	33486
Surr: 4-Bromofluorobenzene	119	66.6-132	%Rec	2	8/23/2017 5:12:09 PM	33486

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

*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 22
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
	D H ND	 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 	D Sample Diluted Due to Matrix E H Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P PQL Practical Quanitative Limit RL

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-21

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:42:00 AM

 Lab ID:
 1708C15-009
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	8/23/2017 2:26:58 PM	33491
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/23/2017 2:26:58 PM	33491
Surr: DNOP	100	70-130	%Rec	1	8/23/2017 2:26:58 PM	33491
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	8/23/2017 7:59:30 PM	33486
Surr: BFB	87.3	54-150	%Rec	1	8/23/2017 7:59:30 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	8/23/2017 7:59:30 PM	33486
Toluene	ND	0.046	mg/Kg	1	8/23/2017 7:59:30 PM	33486
Ethylbenzene	ND	0.046	mg/Kg	1	8/23/2017 7:59:30 PM	33486
Xylenes, Total	ND	0.092	mg/Kg	1	8/23/2017 7:59:30 PM	33486
Surr: 4-Bromofluorobenzene	110	66.6-132	%Rec	1	8/23/2017 7:59:30 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 9 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

8 % Recovery outside of range due to dilution or matrix W Sample container temperature is out of limit as specified

Lab Order 1708C15 Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-22

Project: Hilcorp Lucerne #1 Collection Date: 8/21/2017 10:54:00 AM 1708C15-010 Lab ID: Matrix: SOIL **Received Date:** 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG		Analyst	: ТОМ			
Diesel Range Organics (DRO)	35	9.4	mg/Kg	1	8/23/2017 2:52:05 PM	33491
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/23/2017 2:52:05 PM	33491
Surr: DNOP	96.0	70-130	%Rec	1	8/23/2017 2:52:05 PM	33491
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/23/2017 8:23:22 PM	33486
Surr: BFB	86.2	54-150	%Rec	1	8/23/2017 8:23:22 PM	33486
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	8/23/2017 8:23:22 PM	33486
Toluene	ND	0.049	mg/Kg	1	8/23/2017 8:23:22 PM	33486
Ethylbenzene	ND	0.049	mg/Kg	1	8/23/2017 8:23:22 PM	33486
Xylenes, Total	ND	0.098	mg/Kg	1	8/23/2017 8:23:22 PM	33486
Surr: 4-Bromofluorobenzene	111	66.6-132	%Rec	1	8/23/2017 8:23:22 PM	33486

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

Value exceeds Maximum Contaminant Level. D Sample Diluted Due to Matrix

- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 10 of 22 J
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Qualifiers:

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-23

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 10:59:00 AM

 Lab ID:
 1708C15-011
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG			Analys	t: TOM		
Diesel Range Organics (DRO)	27	9.5	mg/Kg	1	8/23/2017 3:17:13 PM	33491
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/23/2017 3:17:13 PM	33491
Surr: DNOP	90.3	70-130	%Rec	1	8/23/2017 3:17:13 PM	33491
EPA METHOD 8015D: GASOLINE RAN				Analys	t: NSB	
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/23/2017 8:47:09 PM	33486
Surr: BFB	92.3	54-150	%Rec	1	8/23/2017 8:47:09 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 8:47:09 PM	33486
Toluene	ND	0.047	mg/Kg	1	8/23/2017 8:47:09 PM	33486
Ethylbenzene	ND	0.047	mg/Kg	1	8/23/2017 8:47:09 PM	33486
Xylenes, Total	ND	0.094	mg/Kg	1	8/23/2017 8:47:09 PM	33486
Surr: 4-Bromofluorobenzene	115	66.6-132	%Rec	1	8/23/2017 8:47:09 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 11 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Analytical Report Lab Order 1708C15

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-24

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:05:00 AM

 Lab ID:
 1708C15-012
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analys	t: TOM
Diesel Range Organics (DRO)	140	9.6	mg/Kg	1	8/23/2017 3:42:13 PM	33491
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/23/2017 3:42:13 PM	33491
Surr: DNOP	106	70-130	%Rec	1	8/23/2017 3:42:13 PM	33491
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	31	24	mg/Kg	5	8/23/2017 9:10:59 PM	33486
Surr: BFB	179	54-150	S %Rec	5	8/23/2017 9:10:59 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.12	mg/Kg	5	8/23/2017 9:10:59 PM	33486
Toluene	ND	0.24	mg/Kg	5	8/23/2017 9:10:59 PM	33486
Ethylbenzene	ND	0.24	mg/Kg	5	8/23/2017 9:10:59 PM	33486
Xylenes, Total	ND	0.47	mg/Kg	5	8/23/2017 9:10:59 PM	33486
Surr: 4-Bromofluorobenzene	119	66.6-132	%Rec	5	8/23/2017 9:10:59 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 12 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RLReporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-25

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:22:00 AM

 Lab ID:
 1708C15-013
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RAN		Analys	t: TOM			
Diesel Range Organics (DRO)	11	9.6	mg/Kg	1	8/23/2017 4:07:23 PM	33491
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/23/2017 4:07:23 PM	33491
Surr: DNOP	98.5	70-130	%Rec	1	8/23/2017 4:07:23 PM	33491
EPA METHOD 8015D: GASOLINE RAM	NGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	8/23/2017 9:34:51 PM	33486
Surr: BFB	85.8	54-150	%Rec	1	8/23/2017 9:34:51 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.025	mg/Kg	1	8/23/2017 9:34:51 PM	33486
Toluene	ND	0.050	mg/Kg	1	8/23/2017 9:34:51 PM	33486
Ethylbenzene	ND	0.050	mg/Kg	1	8/23/2017 9:34:51 PM	33486
Xylenes, Total	ND	0.099	mg/Kg	1	8/23/2017 9:34:51 PM	33486
Surr: 4-Bromofluorobenzene	109	66.6-132	%Rec	1	8/23/2017 9:34:51 PM	33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 13 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-26

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:26:00 AM

 Lab ID:
 1708C15-014
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG			Analys	st: TOM		
Diesel Range Organics (DRO)	150	9.3	mg/Kg	1	8/23/2017 4:32:19 PM	33491
Motor Oil Range Organics (MRO)	55	46	mg/Kg	1	8/23/2017 4:32:19 PM	33491
Surr: DNOP	99.1	70-130	%Rec	1	8/23/2017 4:32:19 PM	33491
EPA METHOD 8015D: GASOLINE RAN				Analys	t: NSB	
Gasoline Range Organics (GRO)	4.8	4.8	mg/Kg	1	8/23/2017 9:58:42 PM	33486
Surr: BFB	132	54-150	%Rec	1	8/23/2017 9:58:42 PM	33486
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 9:58:42 PM	33486
Toluene	ND	0.048	mg/Kg	1	8/23/2017 9:58:42 PM	33486
Ethylbenzene	ND	0.048	mg/Kg	1	8/23/2017 9:58:42 PM	33486
Xylenes, Total	ND	0.097	mg/Kg	1	8/23/2017 9:58:42 PM	33486
Surr: 4-Bromofluorobenzene	116	66.6-132	%Rec	1	8/23/2017 9:58:42 PM	33486

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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 Page 14 of 22
	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 ReportLab Order **1708C15**

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-27

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:32:00 AM

 Lab ID:
 1708C15-015
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGI	S				Analy	st: TOM	
Diesel Range Organics (DRO)	510	9.9		mg/Kg	1	8/23/2017 4:57:20 PM	1 33491
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/23/2017 4:57:20 PM	1 33491
Surr: DNOP	104	70-130		%Rec	1	8/23/2017 4:57:20 PM	1 33491
EPA METHOD 8015D: GASOLINE RANG	SE .					Analy	st: NSB
Gasoline Range Organics (GRO)	530	25		mg/Kg	5	8/23/2017 10:22:38 P	M 33486
Surr: BFB	585	54-150	S	%Rec	5	8/23/2017 10:22:38 P	M 33486
EPA METHOD 8021B: VOLATILES						Analy	st: NSB
Benzene	0.60	0.12		mg/Kg	5	8/23/2017 10:22:38 P	M 33486
Toluene	ND	0.25		mg/Kg	5	8/23/2017 10:22:38 P	M 33486
Ethylbenzene	3.9	0.25		mg/Kg	5	8/23/2017 10:22:38 P	M 33486
Xylenes, Total	37	0.50		mg/Kg	5	8/23/2017 10:22:38 P	M 33486
Surr: 4-Bromofluorobenzene	143	66.6-132	S	%Rec	5	8/23/2017 10:22:38 P	M 33486

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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 Page 15 of 22
	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

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-28

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:43:00 AM

 Lab ID:
 1708C15-016
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S				Analys	: TOM
Diesel Range Organics (DRO)	150	9.5		mg/Kg	1	8/23/2017 5:22:07 PM	33491
Motor Oil Range Organics (MRO)	56	47		mg/Kg	1	8/23/2017 5:22:07 PM	33491
Surr: DNOP	106	70-130		%Rec	1	8/23/2017 5:22:07 PM	33491
EPA METHOD 8015D: GASOLINE RAN	GE					Analys	t: NSB
Gasoline Range Organics (GRO)	ND	9.4	D	mg/Kg	2	8/23/2017 10:46:34 PM	1 33486
Surr: BFB	153	54-150	SD	%Rec	2	8/23/2017 10:46:34 PM	1 33486
EPA METHOD 8021B: VOLATILES						Analys	t: NSB
Benzene	ND	0.047	D	mg/Kg	2	8/23/2017 10:46:34 PM	1 33486
Toluene	ND	0.094	D	mg/Kg	2	8/23/2017 10:46:34 PM	1 33486
Ethylbenzene	ND	0.094	D	mg/Kg	2	8/23/2017 10:46:34 PM	1 33486
Xylenes, Total	ND	0.19	D	mg/Kg	2	8/23/2017 10:46:34 PM	1 33486
Surr: 4-Bromofluorobenzene	117	66.6-132	D	%Rec	2	8/23/2017 10:46:34 PM	1 33486

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 16 of 22
	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

Lab Order **1708C15**

Date Reported: 8/25/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-29

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:54:00 AM

 Lab ID:
 1708C15-017
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	160	9.6	mg/Kg	1	8/23/2017 5:47:11 PM	33491
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/23/2017 5:47:11 PM	33491
Surr: DNOP	98.6	70-130	%Rec	1	8/23/2017 5:47:11 PM	l 33491
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/23/2017 11:10:31 P	M 33486
Surr: BFB	120	54-150	%Rec	1	8/23/2017 11:10:31 P	M 33486
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.024	mg/Kg	1	8/23/2017 11:10:31 P	M 33486
Toluene	ND	0.047	mg/Kg	1	8/23/2017 11:10:31 P	M 33486
Ethylbenzene	ND	0.047	mg/Kg	1	8/23/2017 11:10:31 P	M 33486
Xylenes, Total	0.28	0.095	mg/Kg	1	8/23/2017 11:10:31 P	M 33486
Surr: 4-Bromofluorobenzene	117	66.6-132	%Rec	1	8/23/2017 11:10:31 P	M 33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 17 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Sample container temperature is out of limit as specified

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-30

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 11:55:00 AM

 Lab ID:
 1708C15-018
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analy	st: TOM
Diesel Range Organics (DRO)	12	9.1	mg/Kg	1	8/23/2017 6:12:23 PM	1 33491
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	8/23/2017 6:12:23 PM	1 33491
Surr: DNOP	102	70-130	%Rec	1	8/23/2017 6:12:23 PM	1 33491
EPA METHOD 8015D: GASOLINE RAN	GE				Analy	st: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	8/23/2017 11:34:25 P	M 33486
Surr: BFB	90.3	54-150	%Rec	1	8/23/2017 11:34:25 P	M 33486
EPA METHOD 8021B: VOLATILES					Analy	st: NSB
Benzene	ND	0.023	mg/Kg	1	8/23/2017 11:34:25 P	M 33486
Toluene	ND	0.046	mg/Kg	1	8/23/2017 11:34:25 P	M 33486
Ethylbenzene	ND	0.046	mg/Kg	1	8/23/2017 11:34:25 P	M 33486
Xylenes, Total	ND	0.091	mg/Kg	1	8/23/2017 11:34:25 P	M 33486
Surr: 4-Bromofluorobenzene	116	66.6-132	%Rec	1	8/23/2017 11:34:25 P	M 33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 18 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

% Recovery outside of range due to dilution or matrix

Lab Order **1708C15**Date Reported: **8/25/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-31

 Project:
 Hilcorp Lucerne #1
 Collection Date: 8/21/2017 12:01:00 PM

 Lab ID:
 1708C15-019
 Matrix: SOIL
 Received Date: 8/22/2017 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANIC	S			Analy	st: TOM
Diesel Range Organics (DRO)	180	9.6	mg/Kg	1	8/23/2017 6:37:30 PM	1 33491
Motor Oil Range Organics (MRO)	48	48	mg/Kg	1	8/23/2017 6:37:30 PM	1 33491
Surr: DNOP	102	70-130	%Rec	1	8/23/2017 6:37:30 PM	1 33491
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	st: NSB
Gasoline Range Organics (GRO)	12	9.4	mg/Kg	2	8/24/2017 1:10:15 AM	1 33486
Surr: BFB	157	54-150	S %Rec	2	8/24/2017 1:10:15 AM	1 33486
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.047	mg/Kg	2	8/24/2017 1:10:15 AM	1 33486
Toluene	ND	0.094	mg/Kg	2	8/24/2017 1:10:15 AM	1 33486
Ethylbenzene	ND	0.094	mg/Kg	2	8/24/2017 1:10:15 AM	33486
Xylenes, Total	0.29	0.19	mg/Kg	2	8/24/2017 1:10:15 AM	33486
Surr: 4-Bromofluorobenzene	124	66.6-132	%Rec	2	8/24/2017 1:10:15 AM	1 33486

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 19 of 22 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1708C15

25-Aug-17

Client: Project:	Č	ineering LLO aucerne #1	С								
Sample ID	LCS-33491	SampTyp	oe: LC	s	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	LCSS	Batch I	D: 33	491	F	RunNo: 4	45144				
Prep Date:	8/22/2017	Analysis Dat	te: 8/	23/2017	5	SeqNo: '	1429399	Units: mg/k	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	47	10	50.00	0	93.7	73.2	114			
Surr: DNOP		5.1		5.000		102	70	130			
Sample ID	MB-33491	SampTyp	oe: ME	BLK	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	PBS	Batch II	D: 33	491	F	RunNo: 4	45144				
Prep Date:	8/22/2017	Analysis Dat	te: 8/	23/2017	Ş	SeqNo: 1	1429400	Units: mg/k	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	ND	10								
Motor Oil Rang	e Organics (MRO)	ND	50								
Surr: DNOP		10		10.00		100	70	130			
Sample ID	1708C15-001AMS	SampTyp	ре: М \$	3	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	SC-13	Batch I	D: 33	491	F	RunNo: 4	45144				
Prep Date:	8/22/2017	Analysis Dat	te: 8/	23/2017	9	SeqNo: '	1429795	Units: mg/h	K g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range (Organics (DRO)	120	9.9	49.55	63.51	110	55.8	122			
Surr: DNOP		5.3		4.955		108	70	130			
Sample ID	1708C15-001AMS	D SampTyp	oe: MS	SD	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	
Client ID:	SC-13	Batch I	D: 33	491	F	RunNo: 4	45144				
Prep Date:	8/22/2017	Analysis Dat	te: 8/	23/2017	5	SeqNo: '	1429796	Units: mg/l	(g		
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
	Organics (DRO)	120	9.5	47.71	63.51	128	55.8	122	5.18	20	S

Qualifiers:

Surr: DNOP

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

5.1

4.771

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

107

70

130

0

0

J Analyte detected below quantitation limits

Page 20 of 22

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Client:

Hall Environmental Analysis Laboratory, Inc.

Rule Engineering LLC

WO#: **1708C15**

25-Aug-17

Project: Hilcorp Lucerne #1 Sample ID MB-33486 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range Client ID: **PBS** Batch ID: 33486 RunNo: 45160 Prep Date: 8/22/2017 Analysis Date: 8/23/2017 SeqNo: 1430151 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) ND 5.0 1000 Surr: BFB 850 84.7 54 150 Sample ID LCS-33486 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range Client ID: LCSS Batch ID: 33486 RunNo: 45160

Analysis Date: 8/23/2017 SeqNo: 1430152 Prep Date: 8/22/2017 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 5.0 25.00 96.6 76.4 125 Surr: BFB 900 1000 89.7 54 150

Sample ID 1708C15-002AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range Client ID: SC-14 Batch ID: 33486 RunNo: 45160 Prep Date: 8/22/2017 Analysis Date: 8/23/2017 SeqNo: 1430155 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Gasoline Range Organics (GRO) 30 23.61 125 77.8 128 Surr: BFB 960 944.3 102 54 150

Sample ID 1708C15-002AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range Client ID: SC-14 Batch ID: 33486 RunNo: 45160 Analysis Date: 8/23/2017 Prep Date: 8/22/2017 SeqNo: 1430156 Units: mg/Kg Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 30 4.9 24.51 122 77.8 128 0.972 20 Λ Surr: BFB 1000 980.4 102 54 150 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

Page 21 of 22

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#:

1708C15 25-Aug-17

Client: Rule Engineering LLC **Project:** Hilcorp Lucerne #1

Sample ID MB-33486 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: **PBS** Batch ID: 33486 RunNo: 45160

Prep Date: 8/22/2017 Analysis Date: 8/23/2017 SeqNo: 1430182 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

Surr: 4-Bromofluorobenzene 1.1 1.000 110 66.6 132

Sample ID LCS-33486 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: **LCSS** Batch ID: 33486 RunNo: 45160 Prep Date: 8/22/2017 Analysis Date: 8/23/2017 SeqNo: 1430183 Units: mg/Kg Analyte **PQL** SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual LowLimit 0.025 1.000 O 109 80 120 Benzene 1.1 Toluene 1.1 0.050 1.000 0 109 80 120 Ethylbenzene 0.050 0 107 80 120 1.1 1.000 Xylenes, Total 3.3 0.10 3.000 0 110 80 120

118

66.6

132

Sample ID 1708C15-001AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

1.000

Client ID: SC-13 Batch ID: 33486 RunNo: 45160

1.2

Prep Date: 8/22/2017 Analysis Date: 8/23/2017 SeqNo: 1430185 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 1.2 0.024 0.9425 0.009698 129 80.9 132 Toluene 1.2 0.047 0.9425 0.01372 130 79.8 136 Ethylbenzene 0.047 0.9425 130 79.4 140 1.3 0.03065 Xylenes, Total 3.8 0.094 2.828 0.06386 132 78.5 142 Surr: 4-Bromofluorobenzene 0.9425 1.2 122 66.6 132

Sample ID 1708C15-001AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SC-13 Batch ID: 33486 RunNo: 45160

Prep Date: 8/22/2017	Analysis D	oate: 8/	23/2017	S	SeqNo: 1	430186	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.2	0.024	0.9506	0.009698	128	80.9	132	0.244	20	
Toluene	1.2	0.048	0.9506	0.01372	129	79.8	136	0.147	20	
Ethylbenzene	1.2	0.048	0.9506	0.03065	127	79.4	140	0.947	20	
Xylenes, Total	3.8	0.095	2.852	0.06386	131	78.5	142	0.402	20	
Surr: 4-Bromofluorobenzene	1.1		0.9506		120	66.6	132	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 22 of 22



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Website: www.hallenvironmental.com

Client	Name:	RULE ENG	SINEERING LL	Work O	rder Number:	17080	:15			Rcp	ot N o:	1
Receive	ed By:	Anne Tho	rne	8/22/2017	7:00:00 AM			anne	A	_		
Comple	eted By:	Anne Tho	rne	8/22/2017	7 8:42:34 AM			Arne . Arne .	1			
Review	ed By:	ENM		8/22/	17			ame.	<i>//</i> ~~			
<u>Chain</u>	of Cus	stody									•	
1. Cus	stody sea	als intact on s	ample bottles?			Yes		No		Not Present	✓	
2. Is 0	Chain of (Custody com	plete?			Yes	~	No		Not Present		
3. Hov	w was the	e sample deli	vered?			Cour	<u>er</u>					
Log li	<u>1</u>											
4. Wa	as an atte	empt made to	cool the sample	es?		Yes	✓	No		NA		
5. We	re all sar	mples receive	ed at a temperat	ure of >0° C t	o 6.0°C	Yes	✓	No		NA		
6. Sai	mple(s) i	n proper cont	ainer(s)?			Yes	✓	No				
7. Suf	ficient sa	mple volume	for indicated te	st(s)?		Yes	✓	No				
8. Are	samples	(except VOA	A and ONG) pro	perly preserve	d?	Yes	~	No				
9. Wa	s preserv	vative added	to bottles?			Yes		No	✓	NA		
10.VO	A vials ha	ave zero head	dspace?			Yes		No		No VOA Vials	~	
11. We	re any s	ample contair	ners received br	oken?		Yes		No		# of preserved		
12 D			awla labalao				اقت	No		bottles checke		
		work match b pancies on cl	oπe labels? hain of custody)			Yes	V	NO			(<2 o	r >12 unless noted)
13. Are	matrices	correctly ide	ntified on Chain	of Custody?		Yes	~	No		Adjusted	i? _	
14. Is it	clear wh	at analyses v	vere requested?	ı		Yes		No				
		_	le to be met? authorization.)			Yes	✓	No		Checked 	by:_	· · · · · · · · · · · · · · · · · · ·
<u>Specia</u>	<u>l H</u> and	lling (if ap	<u>plicable)</u>									
16. Was	s client n	otified of all o	liscrepancies wi	th this order?		Yes		No		NA	✓	_
	Persor	n Notified:			Date	***************************************	•		**********			
	By Wh	om:			Via: [] eMa	il 🗀	Phone 🔲	Fax	☐ In Person		
	Regard	=										
	Client	Instructions:	<u> </u>									
17. Add	ditional re	emarks:										
t	oler Info		1 -									
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	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	505-345-3975 Fax 505-345-4107	Analysis	(*C	(S	MIS	(1.81) (1.40) 30728 300,e0 (A	od 4 bo 0 or 5 bo 1 or 1 bo 1 or 1 bo 1 or 2 b	TPH 8015B TPH (Methorement of Methorement of Methor	*	**	***************************************	9.	***	8	8	9.	>	8		0	page 1 of 2		
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Chain-of-Custody Record	Client: Rult Englineering, LLC	9	Mailing Address: 501 Amport Dr. Ste 205	3740)	2787	email or Fax#: Nwccds@ruleengineering .t ย.m	?)	☐ Level 4 (Full Validation)			Sample Request ID	50-13	SC-14	SC-15	Sc-14	50-17	SC-18	50-19	SC-20	56-21	56-22	50-23	5c-24		hu M. Woods	Control of the second of the s
of-Cu	บันดูเมธตั้ง)	501 A	Farministen, N.M. 87401	Phone #: (505) 7 16-2787	wwds0,			□ Other		Matrix	Soil	Soil	Soil	Sou	Soii	5011	Soil	Soil	Seil	Soul	11.05	5011 SC	Relinquisher	728 Heather	
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Turn-Around Time:	☐ Standard Project Name:	Hilcorp Lu	Project #:		Project Manager:		Hather Woods	Sampler: [144]	On Ice	Sample Temperature:	Container P	(i) if or Glass	(१) पंक्स (ज्ञाहरू	(८) ५०३ ६१६५५	(1) y or (s) an	(1) Horgins	(1) yozum	(1) 4 of (160		(3)			Received by: Received by:
Record		Mailing Address: 501 Auport Dr., Sk 20S		Phone #: (505) 716-2787	neering com		☐ Level 4 (Full Validation)		□ NELAP □ Other	□ EDD (Type)	Date Time Matrix Sample Request ID	8/21/17 1122 Soil SC-25	8/21/17 1126 Soil SC-26	Seyi SC-27	1143 Soil SC-28	1154 Soil SC-29	1155 Soil 130-30	1201 501 50-31		7,44			Stall 1728 Heath M. Wood Chust Batelinguished by: Stall 1728 Heath M. Wood Received by: Stall 1832 Mood William



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

September 29, 2017

Clara Cardoza Hilcorp Energy PO Box 4700 Farmington, NM 87499

TEL: (505) 324-4128

FAX

RE: Lucerne 1 OrderNo.: 1709F46

Dear Clara Cardoza:

Hall Environmental Analysis Laboratory received 2 sample(s) on 9/28/2017 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical ReportLab Order **1709F46**

Date Reported: 9/29/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Hilcorp Energy Client Sample ID: SC-27R

 Project:
 Lucerne 1
 Collection Date: 9/27/2017 7:55:00 AM

 Lab ID:
 1709F46-001
 Matrix: MEOH (SOIL)
 Received Date: 9/28/2017 7:30:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	66	10	mg/Kg	1	9/28/2017 11:38:42 A	M 34120
Motor Oil Range Organics (MRO)	ND	51	mg/Kg	1	9/28/2017 11:38:42 A	M 34120
Surr: DNOP	103	70-130	%Rec	1	9/28/2017 11:38:42 A	M 34120
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	st: NSB
Gasoline Range Organics (GRO)	30	20	mg/Kg	5	9/28/2017 11:16:11 A	M 34110
Surr: BFB	129	54-150	%Rec	5	9/28/2017 11:16:11 A	M 34110
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.10	mg/Kg	5	9/28/2017 11:16:11 A	M 34110
Toluene	ND	0.20	mg/Kg	5	9/28/2017 11:16:11 A	M 34110
Ethylbenzene	0.22	0.20	mg/Kg	5	9/28/2017 11:16:11 A	M 34110
Xylenes, Total	1.9	0.40	mg/Kg	5	9/28/2017 11:16:11 A	M 34110
Surr: 4-Bromofluorobenzene	108	66.6-132	%Rec	5	9/28/2017 11:16:11 A	M 34110

				-
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 5
	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 ReportLab Order **1709F46**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/29/2017

CLIENT: Hilcorp Energy Client Sample ID: SC-17R

 Project:
 Lucerne 1
 Collection Date: 9/27/2017 8:04:00 AM

 Lab ID:
 1709F46-002
 Matrix: MEOH (SOIL)
 Received Date: 9/28/2017 7:30:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANIC	S			Analys	st: TOM
Diesel Range Organics (DRO)	99	9.5	mg/Kg	1	9/28/2017 12:00:45 PI	√ 34120
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	9/28/2017 12:00:45 PI	M 34120
Surr: DNOP	102	70-130	%Rec	1	9/28/2017 12:00:45 PI	√ 34120
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	84	19	mg/Kg	5	9/28/2017 11:39:35 Al	M 34110
Surr: BFB	186	54-150	S %Rec	5	9/28/2017 11:39:35 Al	M 34110
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.096	mg/Kg	5	9/28/2017 11:39:35 Al	M 34110
Toluene	0.68	0.19	mg/Kg	5	9/28/2017 11:39:35 Al	M 34110
Ethylbenzene	0.51	0.19	mg/Kg	5	9/28/2017 11:39:35 Al	M 34110
Xylenes, Total	5.2	0.39	mg/Kg	5	9/28/2017 11:39:35 Al	M 34110
Surr: 4-Bromofluorobenzene	110	66.6-132	%Rec	5	9/28/2017 11:39:35 Al	M 34110

Oualifiers:	*	Value exceeds Maximum Contaminant Level.	D	Analysts detected in the associated Mathed Dloub
Qualifiers:	•	value exceeds Maximum Contammant Level.	Ь	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 5
	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, Inc.

WO#: 1709F46

29-Sep-17

Client: Hilcorp Energy
Project: Lucerne 1

Sample ID LCS-34111 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 34111 RunNo: 45950

Prep Date: 9/27/2017 Analysis Date: 9/28/2017 SeqNo: 1460547 Units: %Rec

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

Surr: DNOP 4.6 5.000 91.7 70 130

Sample ID MB-34111 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 34111 RunNo: 45950

Prep Date: 9/27/2017 Analysis Date: 9/28/2017 SeqNo: 1460548 Units: %Rec

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

Surr: DNOP 9.8 10.00 98.0 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **1709F46**

29-Sep-17

Client: Hilcorp Energy
Project: Lucerne 1

Sample ID MB-34110 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 34110 RunNo: 45958

Prep Date: 9/27/2017 Analysis Date: 9/28/2017 SeqNo: 1461508 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 54 150

Sample ID LCS-34110 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 34110 RunNo: 45958

1000

Prep Date: 9/27/2017 Analysis Date: 9/28/2017 SeqNo: 1461509 Units: mg/Kg

1000

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 30 5.0 25.00 120 76.4 125

54

150

102

Qualifiers:

Surr: BFB

- * 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

1.1

WO#: 1709F46

29-Sep-17

Hilcorp Energy **Client: Project:** Lucerne 1

Surr: 4-Bromofluorobenzene

Sample ID MB-34110 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

PBS Client ID: Batch ID: 34110 RunNo: 45958

Prep Date: 9/27/2017 Analysis Date: 9/28/2017 SeqNo: 1461547 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 ND Xylenes, Total 0.10

Surr: 4-Bromofluorobenzene 1.0 1.000 100 66.6 132

1.000

Sample ID LCS-34110	Samp1	Гуре: LC	S	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: LCSS	Batcl	h ID: 34	110	F	RunNo: 4	5958				
Prep Date: 9/27/2017	Analysis D	Date: 9/	28/2017	S	SeqNo: 1	461559	Units: mg/k	ίg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	106	80	120			
Toluene	1.1	0.050	1.000	0	106	80	120			
Ethylbenzene	1.1	0.050	1.000	0	109	80	120			
Xylenes, Total	3.3	0.10	3.000	0	111	80	120			

106

66.6

132

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Reporting Detection Limit

Sample pH Not In Range

RL

Sample container temperature is out of limit as specified

Page 5 of 5



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:	HILCORP ENERGY	Work Order Number:	1709F46		RcptNo:	1
Received By:	Sophia Campuzano	9/28/2017 7:30:00 AM		Josephia Bayeria —		
Completed By:	Sophia Campuzano	9/28/2017 8:40:05 AM		Sophia Compu -	-	
Reviewed By:	ENM	9/28/17				
Chain of Cus	etody					
1. Custody sea	als intact on sample bottles?	,	Yes 🗌	No 🗌	Not Present 🗹	
2. Is Chain of 0	Custody complete?		Yes 🗹	No 🗌	Not Present	
3. How was the	e sample delivered?		<u>Courier</u>			
<u>Log In</u>						
4. Was an atte	empt made to cool the samp	les?	Yes 🗹	No 🗆	na 🗆	
5. Were all sar	mples received at a tempera	sture of >0° C to 6.0°C	Yes 🗹	No 🗆	na 🗆	
6. Sample(s) in	n proper container(s)?		Yes 🗹	No 🗆		
7. Sufficient sa	mple volume for indicated to	est(s)?	Yes 🗹	No 🗆		
8. Are samples	(except VOA and ONG) pr	operly preserved?	Yes 🗸	No 🗌		
9. Was presen	vative added to bottles?		Yes 🗌	No 🗹	NA 🗆	
10.VOA vials ha	ave zero headspace?		Yes 🗌	No 🗆	No VOA Vials 🗹	
11, Were any sa	ample containers received b	roken?	Yes 🗌	No 🗹	# of preserved	
12. Does paper	work match bottle labels?		Yes 🗹	No 🗆	bottles checked for pH:	
	pancies on chain of custody)		!	(<2 or	>12 unless noted)
13. Are matrices	correctly identified on Chai	n of Custody?	Yes 🗹	No 🗆	Adjusted?	
	at analyses were requested	?	Yes 🗹	No 🔲 :		
	ding times able to be met? customer for authorization.)		Yes 🗹	No 🗆	Checked by:	
Special Hand	lling (if applicable)					
	otified of all discrepancies v	vith this order?	Yes 🗌	No 🗌	na 🗹	
Persor	n Notified:	Date				
By Wh	om:	Via:	eMail	Phone Fax	☐ In Person	
Regare	ding:	**************************************	man make da	TO THE RESIDENCE OF THE PARTY O		
Client	Instructions:					
17. Additional re	emarks:					
18. <u>Cooler Info</u>	rmation					
Cooler N		Seal Intact Seal No	Seal Date	Signed By		
1	3.6 Good	Yes				
						

į	ITAL							(N 10) (Y	selddu8 iiA					eport.
	HALL ENVIRONMENTAL ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	(PC)	(Gas on NP (OS o	H9T + R0 / Og (1.81) (1.40) S 0758 S 0758 S 088 / S	(GF) Or Selection (GF)	BTEX + MIT BTEX + MIT TPH 8015B TPH (Methodetholome (Methodetholome (F,C) ROB1 Pestic 8081 Pestic 8081 Pestic	×	X		Remarks: AFE#17527.17	Ssibility, Any sub-contracted data will be clearly notated on the analytical re
Turn-Around Time:	District Name: X Rush Owerward		3	Project #:	Licens	Project Manager:	Cardora	Sampler. Clara Caraca	Temperature: 3, 6	Preservative HEAL No. Type (709F46	Glass001	407-6168002		Received by: Received by: Received by: Ca/2817 0730	edited laborat
Chain-of-Custody Record	Client: Hlorp Energy		Malling Address: 70 Sex 4700	Farmoth NM 87499	Phone #: 505 - 364-0733	email or Fax#: clardoza Chilurg. Com	QA/QC Package: Q Standard □ Level 4 (Full Validation)	Accreditation	□ EDD (Type)	Date Time Matrix Sample Request ID	121/7 755m So. 1 SC-27R	17178:04% So. 1 Sc-17R		Reimgu	1320 1320 MAX WITH Environmental may be subo



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

November 02, 2017

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: Lucerne 1 OrderNo.: 1710F60

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 10/31/2017 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109



Analytical Report
Lab Order 1710F60

Date Reported: 11/2/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-32R

 Project:
 Lucerne 1
 Collection Date: 10/30/2017 1:30:00 PM

 Lab ID:
 1710F60-001
 Matrix: MEOH (SOIL)
 Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL (Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS					Ana	lyst: TOM
Diesel Range Organics (DRO)	620	9.4		mg/Kg	1	10/31/2017 11:37:4	4 AM 34718
Motor Oil Range Organics (MRO)	170	47		mg/Kg	1	10/31/2017 11:37:4	4 AM 34718
Surr: DNOP	101	70-130		%Rec	1	10/31/2017 11:37:4	4 AM 34718
EPA METHOD 8015D: GASOLINE RAN	GE					Ana	lyst: NSB
Gasoline Range Organics (GRO)	270	18		mg/Kg	5	10/31/2017 11:35:1	2 AM G46775
Surr: BFB	654	15-316	S	%Rec	5	10/31/2017 11:35:1	2 AM G46775
EPA METHOD 8021B: VOLATILES						Ana	lyst: NSB
Benzene	0.16	0.092		mg/Kg	5	10/31/2017 11:35:1	2 AM B46775
Toluene	ND	0.18		mg/Kg	5	10/31/2017 11:35:1	2 AM B46775
Ethylbenzene	1.6	0.18		mg/Kg	5	10/31/2017 11:35:1	2 AM B46775
Xylenes, Total	18	0.37		mg/Kg	5	10/31/2017 11:35:1	2 AM B46775
Surr: 4-Bromofluorobenzene	145	80-120	S	%Rec	5	10/31/2017 11:35:1	2 AM B46775

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 6
	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

Date Reported: 11/2/2017

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-33R

 Project:
 Lucerne 1
 Collection Date: 10/30/2017 1:45:00 PM

 Lab ID:
 1710F60-002
 Matrix: MEOH (SOIL)
 Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	5			Ana	lyst: TOM
Diesel Range Organics (DRO)	180	9.8	mg/Kg	1	10/31/2017 12:05:1	6 PM 34718
Motor Oil Range Organics (MRO)	58	49	mg/Kg	1	10/31/2017 12:05:1	6 PM 34718
Surr: DNOP	90.7	70-130	%Rec	1	10/31/2017 12:05:1	6 PM 34718
EPA METHOD 8015D: GASOLINE RAN	GE				Ana	lyst: NSB
Gasoline Range Organics (GRO)	22	17	mg/Kg	5	10/31/2017 12:22:5	5 PM G46775
Surr: BFB	195	15-316	%Rec	5	10/31/2017 12:22:5	5 PM G46775
EPA METHOD 8021B: VOLATILES					Ana	lyst: NSB
Benzene	ND	0.087	mg/Kg	5	10/31/2017 12:22:5	5 PM B46775
Toluene	ND	0.17	mg/Kg	5	10/31/2017 12:22:5	5 PM B46775
Ethylbenzene	ND	0.17	mg/Kg	5	10/31/2017 12:22:5	5 PM B46775
Xylenes, Total	ND	0.35	mg/Kg	5	10/31/2017 12:22:5	5 PM B46775
Surr: 4-Bromofluorobenzene	111	80-120	%Rec	5	10/31/2017 12:22:5	5 PM B46775

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 2 of 6 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Lab Order **1710F60**Date Reported: **11/2/2017**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-35

 Project:
 Lucerne 1
 Collection Date: 10/30/2017 2:00:00 PM

 Lab ID:
 1710F60-003
 Matrix: MEOH (SOIL)
 Received Date: 10/31/2017 8:15:00 AM

Analyses	Result	PQL Qu	al Units	DF 1	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	5			Analy	st: TOM
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	10/31/2017 12:32:54	PM 34718
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	10/31/2017 12:32:54	PM 34718
Surr: DNOP	84.8	70-130	%Rec	1	10/31/2017 12:32:54	PM 34718
EPA METHOD 8015D: GASOLINE RANG	GE				Analy	/st: NSB
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	10/31/2017 1:10:21 F	PM G46775
Surr: BFB	106	15-316	%Rec	1	10/31/2017 1:10:21 F	PM G46775
EPA METHOD 8021B: VOLATILES					Analy	/st: NSB
Benzene	ND	0.020	mg/Kg	1	10/31/2017 1:10:21 F	PM B46775
Toluene	ND	0.039	mg/Kg	1	10/31/2017 1:10:21 F	PM B46775
Ethylbenzene	ND	0.039	mg/Kg	1	10/31/2017 1:10:21 F	PM B46775
Xylenes, Total	ND	0.079	mg/Kg	1	10/31/2017 1:10:21 F	PM B46775
Surr: 4-Bromofluorobenzene	107	80-120	%Rec	1	10/31/2017 1:10:21 F	PM B46775

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 3 of 6 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710F60**

02-Nov-17

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID LCS-34718 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 34718 RunNo: 46767 Prep Date: 10/31/2017 Analysis Date: 10/31/2017 SeqNo: 1490982 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 10 46 50.00 0 93.0 73.2 114 Surr: DNOP 5.000 84.6 4.2 70 130

Sample ID MB-34718 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Batch ID: 34718 Client ID: PBS RunNo: 46767 Prep Date: 10/31/2017 Analysis Date: 10/31/2017 SeqNo: 1490986 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 8.6 10.00 85.8 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 Detection Limit
- W Sample container temperature is out of limit as specified

quantitation range

Page 4 of 6

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710F60**

02-Nov-17

Client: Rule Engineering LLC

Project: Lucerne 1

Surr: BFB

Sample ID RB SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: G46775 RunNo: 46775

Prep Date: Analysis Date: 10/31/2017 SeqNo: 1491516 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 100 15 316

Sample ID 2.5UG GRO CCV SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: G46775 RunNo: 46775

1100

Prep Date: Analysis Date: 10/31/2017 SeqNo: 1491517 Units: mg/Kg

1000

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 75.9 131

110

15

316

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 Detection Limit
- W Sample container temperature is out of limit as specified

tation range

Page 5 of 6

Hall Environmental Analysis Laboratory, Inc.

WO#: **1710F60**

02-Nov-17

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles **PBS** Client ID: Batch ID: **B46775** RunNo: 46775 Prep Date: Analysis Date: 10/31/2017 SeqNo: 1491539 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 ND Xylenes, Total 0.10 Surr: 4-Bromofluorobenzene 1.0 1.000 100 80 120

Sample ID 100NG BTEX LC	S Samp	SampType: LCS TestCode: EPA Method 8021B: Volatiles								
Client ID: LCSS	Batc	h ID: B4	6775	F	RunNo: 4	6775				
Prep Date:	Analysis [Date: 10	0/31/2017	S	SeqNo: 1	491540	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.5	77.3	128			
Toluene	0.97	0.050	1.000	0	97.0	79.2	125			
Ethylbenzene	0.96	0.050	1.000	0	96.3	80.7	127			
Xylenes, Total	2.9	0.10	3.000	0	96.7	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 6 of 6



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107

Sample Log-In Check List

Received By: Richie Eriacho 10/31/2017 8:15:00 AM	Client Name:	RULE ENGINEERING LL	Work Order N	umber: 1710F60		RcptNo: 1
Chain of Custody 1. Custody seals intact on sample bottles?	Completed By:	Sophia Campuzano	10/31/2017 8:53		/2 Sophia Ca-	
1. Custody seats intact on sample bottles? 2. Is Chain of Custody complete? 3. How was the sample delivered? Courier Log In 4. Was an attempt made to cool the samples? 5. Were all samples received at a temperature of >0° C to 6.0°C Sample(s) in proper container(s)? 7. Sufficient sample volume for indicated test(s)? 8. Are samples (except VOA and ONG) properly preserved? 9. Was preservative added to bottles? 10. VOA viais have zero headspace? 11. Were any sample containers received broken? 22. Does paperwork match bottle tabels? (Note discrepancies on chain of custody) 3. Are matrices correctly identified on Chain of Custody? 4. Is it clear what analyses were requested? 5. Were all samples received broken? Yes W No No No VOA Viais W # of preserved bottles. Was client notified of all discrepancies with this order? Person Notified: By Whom: Regarding: Chert instructions: Additional remarks: Cooler No Temp *C Condition* Seal Infact. Seal No Seal Date * Condition* Seal Date * Condition* Seal Infact. Seal No Seal Date * Condition* Seal Date * Con	Chain of Custo	odv				
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Turn-Around Time:	☐ Standard	Project Name:	Lucerne,	Project #:		Project Manager:	Heath	Sampler: Justin	Sample Temperature.	Container Type and #	(1) yoz (2) (25)		→					:			Received by:	Keceived by:	ontracted to other a
Chain-of-Custody Record	m, LLC	7	Mailing Address: 501 Airory Onue	YON, NM \$7401	9486	email or Fax#: JUNICE & @ NUTE ENVIRENTE (BY)				Sample Request ID	51-32 K	SC-33 R	56-35			:					lby: Calle	7	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.
1-of-Cu	Client: Rule Engineering	7	s: 501 (Suite 105 Faminiation	793	Just de Ca	1. W	□ Other		Matrix	12,1		->								Relinquished by:	Yearing duisner	; samples submi
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

March 29, 2018

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

FAX

RE: Lucerne 1 OrderNo.: 1803D47

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 13 sample(s) on 3/24/2018 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 #NM0190

Sincerely,

Andy Freeman

Laboratory Manager

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report Lab Order 1803D47

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-36

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:10:00 AM

 Lab ID:
 1803D47-001
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	3/28/2018 12:37:47 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 12:37:47 PM	37262
Surr: DNOP	77.2	70-130	%Rec	1	3/28/2018 12:37:47 PM	37262
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	3/27/2018 5:20:34 PM	37235
Surr: BFB	92.5	15-316	%Rec	1	3/27/2018 5:20:34 PM	37235
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	3/27/2018 5:20:34 PM	37235
Toluene	ND	0.046	mg/Kg	1	3/27/2018 5:20:34 PM	37235
Ethylbenzene	ND	0.046	mg/Kg	1	3/27/2018 5:20:34 PM	37235
Xylenes, Total	ND	0.093	mg/Kg	1	3/27/2018 5:20:34 PM	37235
Surr: 4-Bromofluorobenzene	85.7	80-120	%Rec	1	3/27/2018 5:20:34 PM	37235

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 Page 1 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-37

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:16:00 AM

 Lab ID:
 1803D47-002
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analys	st: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	3/28/2018 1:02:05 PM	37262
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/28/2018 1:02:05 PM	37262
Surr: DNOP	77.5	70-130	%Rec	1	3/28/2018 1:02:05 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/27/2018 11:53:56 A	M 37235
Surr: BFB	92.4	15-316	%Rec	1	3/27/2018 11:53:56 A	M 37235
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 11:53:56 A	M 37235
Toluene	ND	0.048	mg/Kg	1	3/27/2018 11:53:56 A	M 37235
Ethylbenzene	ND	0.048	mg/Kg	1	3/27/2018 11:53:56 A	M 37235
Xylenes, Total	ND	0.096	mg/Kg	1	3/27/2018 11:53:56 A	M 37235
Surr: 4-Bromofluorobenzene	86.6	80-120	%Rec	1	3/27/2018 11:53:56 A	M 37235

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 17
	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

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-38

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:24:00 AM

 Lab ID:
 1803D47-003
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analys	st: TOM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/28/2018 1:26:20 PM	37262
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/28/2018 1:26:20 PM	37262
Surr: DNOP	75.9	70-130	%Rec	1	3/28/2018 1:26:20 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	st: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/27/2018 12:17:23 PI	M 37235
Surr: BFB	93.9	15-316	%Rec	1	3/27/2018 12:17:23 PI	M 37235
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.023	mg/Kg	1	3/27/2018 12:17:23 PI	M 37235
Toluene	ND	0.047	mg/Kg	1	3/27/2018 12:17:23 PI	M 37235
Ethylbenzene	ND	0.047	mg/Kg	1	3/27/2018 12:17:23 PI	M 37235
Xylenes, Total	ND	0.093	mg/Kg	1	3/27/2018 12:17:23 PI	M 37235
Surr: 4-Bromofluorobenzene	88.2	80-120	%Rec	1	3/27/2018 12:17:23 PI	M 37235

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 3 of 17 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-39

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:30:00 AM

 Lab ID:
 1803D47-004
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	5			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	3/28/2018 1:50:44 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 1:50:44 PM	37262
Surr: DNOP	73.4	70-130	%Rec	1	3/28/2018 1:50:44 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/27/2018 12:40:37 PM	37235
Surr: BFB	94.3	15-316	%Rec	1	3/27/2018 12:40:37 PM	37235
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 12:40:37 PM	37235
Toluene	ND	0.047	mg/Kg	1	3/27/2018 12:40:37 PM	37235
Ethylbenzene	ND	0.047	mg/Kg	1	3/27/2018 12:40:37 PM	37235
Xylenes, Total	ND	0.094	mg/Kg	1	3/27/2018 12:40:37 PM	37235
Surr: 4-Bromofluorobenzene	88.4	80-120	%Rec	1	3/27/2018 12:40:37 PM	37235

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 4 of 17 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-40

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:36:00 AM

 Lab ID:
 1803D47-005
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	3			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	3/28/2018 2:15:00 PM	37262
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	3/28/2018 2:15:00 PM	37262
Surr: DNOP	72.2	70-130	%Rec	1	3/28/2018 2:15:00 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	3/27/2018 1:03:56 PM	37235
Surr: BFB	94.4	15-316	%Rec	1	3/27/2018 1:03:56 PM	37235
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.025	mg/Kg	1	3/27/2018 1:03:56 PM	37235
Toluene	ND	0.049	mg/Kg	1	3/27/2018 1:03:56 PM	37235
Ethylbenzene	ND	0.049	mg/Kg	1	3/27/2018 1:03:56 PM	37235
Xylenes, Total	ND	0.099	mg/Kg	1	3/27/2018 1:03:56 PM	37235
Surr: 4-Bromofluorobenzene	86.8	80-120	%Rec	1	3/27/2018 1:03:56 PM	37235

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 17
	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

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-41

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:43:00 AM

 Lab ID:
 1803D47-006
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG		Analys	t: TOM			
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	3/28/2018 2:39:25 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 2:39:25 PM	37262
Surr: DNOP	72.5	70-130	%Rec	1	3/28/2018 2:39:25 PM	37262
EPA METHOD 8015D: GASOLINE RAN	IGE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/27/2018 2:37:37 PM	37240
Surr: BFB	95.9	15-316	%Rec	1	3/27/2018 2:37:37 PM	37240
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 2:37:37 PM	37240
Toluene	ND	0.048	mg/Kg	1	3/27/2018 2:37:37 PM	37240
Ethylbenzene	ND	0.048	mg/Kg	1	3/27/2018 2:37:37 PM	37240
Xylenes, Total	ND	0.096	mg/Kg	1	3/27/2018 2:37:37 PM	37240
Surr: 4-Bromofluorobenzene	87.9	80-120	%Rec	1	3/27/2018 2:37:37 PM	37240

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 17
	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

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-42

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:51:00 AM

 Lab ID:
 1803D47-007
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF I	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	5			Analyst	: ТОМ
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/28/2018 3:03:45 PM	37262
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/28/2018 3:03:45 PM	37262
Surr: DNOP	74.9	70-130	%Rec	1	3/28/2018 3:03:45 PM	37262
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/27/2018 7:17:13 PM	37240
Surr: BFB	93.2	15-316	%Rec	1	3/27/2018 7:17:13 PM	37240
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	3/27/2018 7:17:13 PM	37240
Toluene	ND	0.047	mg/Kg	1	3/27/2018 7:17:13 PM	37240
Ethylbenzene	ND	0.047	mg/Kg	1	3/27/2018 7:17:13 PM	37240
Xylenes, Total	ND	0.093	mg/Kg	1	3/27/2018 7:17:13 PM	37240
Surr: 4-Bromofluorobenzene	87.1	80-120	%Rec	1	3/27/2018 7:17:13 PM	37240

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 17
	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

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-43

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:55:00 AM

 Lab ID:
 1803D47-008
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	5			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	3/28/2018 3:28:24 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 3:28:24 PM	37262
Surr: DNOP	76.7	70-130	%Rec	1	3/28/2018 3:28:24 PM	37262
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	3/27/2018 7:40:32 PM	37240
Surr: BFB	94.4	15-316	%Rec	1	3/27/2018 7:40:32 PM	37240
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 7:40:32 PM	37240
Toluene	ND	0.049	mg/Kg	1	3/27/2018 7:40:32 PM	37240
Ethylbenzene	ND	0.049	mg/Kg	1	3/27/2018 7:40:32 PM	37240
Xylenes, Total	ND	0.097	mg/Kg	1	3/27/2018 7:40:32 PM	37240
Surr: 4-Bromofluorobenzene	86.3	80-120	%Rec	1	3/27/2018 7:40:32 PM	37240

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 17
	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

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-44

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 9:58:00 AM

 Lab ID:
 1803D47-009
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	GE ORGANICS	5			Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	3/28/2018 3:53:02 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 3:53:02 PM	37262
Surr: DNOP	74.1	70-130	%Rec	1	3/28/2018 3:53:02 PM	37262
EPA METHOD 8015D: GASOLINE RAN	IGE				Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/27/2018 8:03:49 PM	37240
Surr: BFB	94.0	15-316	%Rec	1	3/27/2018 8:03:49 PM	37240
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 8:03:49 PM	37240
Toluene	ND	0.047	mg/Kg	1	3/27/2018 8:03:49 PM	37240
Ethylbenzene	ND	0.047	mg/Kg	1	3/27/2018 8:03:49 PM	37240
Xylenes, Total	ND	0.095	mg/Kg	1	3/27/2018 8:03:49 PM	37240
Surr: 4-Bromofluorobenzene	87.6	80-120	%Rec	1	3/27/2018 8:03:49 PM	37240

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 9 of 17 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

% Recovery outside of range due to dilution or matrix W Sample container temperature is out of limit as specified

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-45

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 10:02:00 AM

 Lab ID:
 1803D47-010
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	5			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	3/28/2018 4:17:40 PM	37262
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/28/2018 4:17:40 PM	37262
Surr: DNOP	77.0	70-130	%Rec	1	3/28/2018 4:17:40 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	3/27/2018 8:27:02 PM	37240
Surr: BFB	91.2	15-316	%Rec	1	3/27/2018 8:27:02 PM	37240
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	3/27/2018 8:27:02 PM	37240
Toluene	ND	0.047	mg/Kg	1	3/27/2018 8:27:02 PM	37240
Ethylbenzene	ND	0.047	mg/Kg	1	3/27/2018 8:27:02 PM	37240
Xylenes, Total	ND	0.094	mg/Kg	1	3/27/2018 8:27:02 PM	37240
Surr: 4-Bromofluorobenzene	83.7	80-120	%Rec	1	3/27/2018 8:27:02 PM	37240

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 Page 10 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-46

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 10:10:00 AM

 Lab ID:
 1803D47-011
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	SE ORGANICS	5			Analys	t: TOM
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	3/28/2018 4:42:12 PM	37262
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	3/28/2018 4:42:12 PM	37262
Surr: DNOP	78.4	70-130	%Rec	1	3/28/2018 4:42:12 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	3/27/2018 8:50:19 PM	37240
Surr: BFB	90.9	15-316	%Rec	1	3/27/2018 8:50:19 PM	37240
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.023	mg/Kg	1	3/27/2018 8:50:19 PM	37240
Toluene	ND	0.046	mg/Kg	1	3/27/2018 8:50:19 PM	37240
Ethylbenzene	ND	0.046	mg/Kg	1	3/27/2018 8:50:19 PM	37240
Xylenes, Total	ND	0.092	mg/Kg	1	3/27/2018 8:50:19 PM	37240
Surr: 4-Bromofluorobenzene	84.9	80-120	%Rec	1	3/27/2018 8:50:19 PM	37240

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 11 of 17 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit

Sample container temperature is out of limit as specified

% Recovery outside of range due to dilution or matrix

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-47

 Project:
 Lucerne 1
 Collection Date: 3/23/2018 10:21:00 AM

 Lab ID:
 1803D47-012
 Matrix: SOIL
 Received Date: 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	5			Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	3/28/2018 4:25:42 PM	37262
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	3/28/2018 4:25:42 PM	37262
Surr: DNOP	87.8	70-130	%Rec	1	3/28/2018 4:25:42 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/27/2018 10:23:03 PM	M 37240
Surr: BFB	90.2	15-316	%Rec	1	3/27/2018 10:23:03 PM	M 37240
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 10:23:03 PM	M 37240
Toluene	ND	0.048	mg/Kg	1	3/27/2018 10:23:03 PM	M 37240
Ethylbenzene	ND	0.048	mg/Kg	1	3/27/2018 10:23:03 PM	M 37240
Xylenes, Total	ND	0.096	mg/Kg	1	3/27/2018 10:23:03 PM	M 37240
Surr: 4-Bromofluorobenzene	83.8	80-120	%Rec	1	3/27/2018 10:23:03 PM	M 37240

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

Qualifiers: * Value exc

- * 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 Page 12 of 17
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

Date Reported: 3/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-48

Project: Lucerne 1 Collection Date: 3/23/2018 10:29:00 AM 1803D47-013 Lab ID: Matrix: SOIL **Received Date:** 3/24/2018 9:00:00 AM

Analyses	Result	PQL Qu	al Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANG	E ORGANICS	5			Analys	: TOM
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	3/28/2018 3:58:13 PM	37262
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	3/28/2018 3:58:13 PM	37262
Surr: DNOP	88.7	70-130	%Rec	1	3/28/2018 3:58:13 PM	37262
EPA METHOD 8015D: GASOLINE RAN	GE				Analys	t: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	3/27/2018 10:46:17 PM	1 37240
Surr: BFB	95.2	15-316	%Rec	1	3/27/2018 10:46:17 PM	1 37240
EPA METHOD 8021B: VOLATILES					Analys	t: NSB
Benzene	ND	0.024	mg/Kg	1	3/27/2018 10:46:17 PM	1 37240
Toluene	ND	0.048	mg/Kg	1	3/27/2018 10:46:17 PM	1 37240
Ethylbenzene	ND	0.048	mg/Kg	1	3/27/2018 10:46:17 PM	1 37240
Xylenes, Total	ND	0.096	mg/Kg	1	3/27/2018 10:46:17 PM	1 37240
Surr: 4-Bromofluorobenzene	84.6	80-120	%Rec	1	3/27/2018 10:46:17 PM	1 37240

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

Value exceeds Maximum Contaminant Level.

- D Sample Diluted Due to Matrix
- Н Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- PQL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- Analyte detected in the associated Method Blank
- Е Value above quantitation range
- Analyte detected below quantitation limits Page 13 of 17 J
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Qualifiers:

Hall Environmental Analysis Laboratory, Inc.

Result

4.4

Result

PQL

WO#: 1803D47

29-Mar-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID LCS-37276 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 37276 RunNo: 50137

Prep Date: 3/27/2018 Analysis Date: 3/28/2018 SeqNo: 1624041 Units: %Rec

Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Surr: DNOP 4.3 5.000 86.2 70 130

Sample ID MB-37276 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 37276 RunNo: 50137 Prep Date: 3/27/2018 Analysis Date: 3/28/2018 SeqNo: 1624042 Units: %Rec

LowLimit

70

LowLimit

130

HighLimit

SPK value SPK Ref Val %REC Analyte HighLimit Surr: DNOP 8.3 10.00 82.9 130

Sample ID LCS-37262 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 37262 RunNo: 50136 Prep Date: 3/27/2018 Analysis Date: 3/28/2018 SeqNo: 1624049 Units: mg/Kg %REC Result **PQL** SPK value SPK Ref Val LowLimit HighLimit %RPD **RPDLimit** Qual Analyte Diesel Range Organics (DRO) 49 10 50.00 0 98.4 70 130

87.7

%REC

Sample ID MB-37262 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 37262 RunNo: 50136 Prep Date: 3/27/2018 Analysis Date: 3/28/2018 SeqNo: 1624050 Units: mg/Kg

SPK value SPK Ref Val

Diesel Range Organics (DRO) ND 10 Motor Oil Range Organics (MRO) ND 50 Surr: DNOP 9.2 91.6 10.00 70 130

5.000

Qualifiers:

Surr: DNOP

Analyte

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 14 of 17

%RPD

%RPD

RPDLimit

RPDLimit

Qual

Qual

Hall Environmental Analysis Laboratory, Inc.

WO#: **1803D47**

29-Mar-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-37235 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 37235 RunNo: 50113

Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622787 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 990 1000 99.0 15 316

Sample ID LCS-37235 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 37235 RunNo: 50113

Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622788 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
 106
 75.9
 131

 Surr: BFB
 1100
 1000
 111
 15
 316

Sample ID MB-37240 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 37240 RunNo: 50113

Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622795 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 15 316

Sample ID LCS-37240 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 37240 RunNo: 50113

Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622796 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
 102
 75.9
 131

 Surr: BFB
 1100
 1000
 109
 15
 316

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

Reporting Detection Limit

J Analyte detected below quantitation limits

Completed below quantum

P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

Page 15 of 17

Hall Environmental Analysis Laboratory, Inc.

WO#: 1803D47

29-Mar-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-37235 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: 37235 RunNo: 50113 Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622821 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene ND 0.025 ND 0.050 ND 0.050

Toluene Ethylbenzene Xylenes, Total ND 0.10

Surr: 4-Bromofluorobenzene 0.93 1.000 92.6 80 120

0.9756

Sample ID LCS-37235 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: **LCSS** Batch ID: 37235 RunNo: 50113 Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622822 Units: mg/Kg LowLimit **PQL** SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result Qual 0.025 1.000 O 99.3 77.3 128 Benzene 0.99 Toluene 0.99 0.050 1.000 0 99.2 79.2 125 Ethylbenzene 0.98 0.050 0 98.1 80.7 127 1.000 Xylenes, Total 3.0 0.10 3.000 0 100 81.6 129 Surr: 4-Bromofluorobenzene 0.92 1.000 92.0 80 120

Sample ID 1803D47-001AMS SampType: MS TestCode: EPA Method 8021B: Volatiles Client ID: SC-36 Batch ID: 37235 RunNo: 50113 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622825 Prep Date: Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 0.96 0.024 0.9756 98.0 68.5 133 Λ Toluene 0.97 0.049 0.9756 0 99.0 75 130 0.049 0.9756 0 98.4 79.4 128 Ethylbenzene 0.96 Xylenes, Total 3.0 0.098 2.927 0 101 77.3 131

Sample ID 1803D47-001AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles Client ID: SC-36 Batch ID: 37235 RunNo: 50113 Prep Date: Analysis Date: 3/27/2018 SeqNo: 1622826 3/26/2018 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual 0.99 0.025 0.9814 0 101 68.5 133 3.70 20 Benzene Toluene 1.0 0.049 0.9814 0 102 75 130 3.66 20 Ethylbenzene 1.0 0.049 0.9814 0 104 79.4 128 6.57 20 Xylenes, Total 3.2 0.098 2.944 0 108 77.3 131 20 7.11 Surr: 4-Bromofluorobenzene 0.86 0.9814 87.8 80 120 Λ 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Surr: 4-Bromofluorobenzene

Η Holding times for preparation or analysis exceeded

0.86

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

87.9

80

120

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

W Sample container temperature is out of limit as specified Page 16 of 17

Hall Environmental Analysis Laboratory, Inc.

0.89

WO#: **1803D47**

29-Mar-18

Client: Rule Engineering LLC

Project: Lucerne 1

Surr: 4-Bromofluorobenzene

Sample ID MB-37240 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: 37240 RunNo: 50113 Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622831 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

89.1

80

120

1.000

Sample ID LCS-37240 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: **LCSS** Batch ID: 37240 RunNo: 50113 Prep Date: 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622832 Units: mg/Kg LowLimit **PQL** SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Analyte Result Qual 0.025 1.000 O 77.3 128 Benzene 0.99 98.6 Toluene 0.98 0.050 1.000 0 97.9 79.2 125 Ethylbenzene 0.97 0.050 0 97.2 80.7 127 1.000 Xylenes, Total 3.0 0.10 3.000 0 99.8 81.6 129 Surr: 4-Bromofluorobenzene 0.91 1.000 91.3 80 120

Sample ID 1803D47-006AMS SampType: MS TestCode: EPA Method 8021B: Volatiles Client ID: SC-41 Batch ID: 37240 RunNo: 50113 3/26/2018 Analysis Date: 3/27/2018 SeqNo: 1622835 Prep Date: Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 1.0 0.024 0.9709 106 68.5 133 Λ Toluene 0.049 0.9709 0.009483 106 75 130 1.0 0.049 0.9709 107 79.4 128 Ethylbenzene 1.0 0 0.02931 Xylenes, Total 3.2 0.097 2.913 109 77.3 131 Surr: 4-Bromofluorobenzene 0.9709 89.5 0.87 80 120

Sample ID 1803D47-006AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles Client ID: SC-41 Batch ID: 37240 RunNo: 50113 Prep Date: Analysis Date: 3/27/2018 SeqNo: 1622836 3/26/2018 Units: mg/Kg %REC %RPD **RPDLimit** Analyte Result **PQL** SPK value SPK Ref Val LowLimit HighLimit Qual 1.1 0.025 0.9960 0 105 68.5 133 2.48 20 Benzene Toluene 1.1 0.050 0.9960 0.009483 106 75 130 2.24 20 Ethylbenzene 1.0 0.050 0.9960 0 105 79.4 128 1.06 20 Xylenes, Total 3.3 0.10 2.988 0.02931 108 77.3 131 1.45 20 Surr: 4-Bromofluorobenzene 0.86 0.9960 86.6 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 17 of 17



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 EN	NGINEERING LL	Work Order	Number: 1803D47			RcptNo:	1
Received By: Ashley	Gallegos	3/24/2018 9:0	0:00 AM	A	ð		
Completed By: Ashley	Gallegos	3/24/2018 10:	45:20 AM	A	7		
Reviewed By: 75	3/2	24hB	Labeled	by:	mw	3/26/18	
Chain of Custody							
Is Chain of Custody con	mplete?		Yes 🗹	No		Not Present	
2. How was the sample de	livered?		Courier				
Log In 3. Was an attempt made to	o cool the samples?		Yes 🗸	No		ŅA 🗆	
4. Were all samples receive	ed at a temperature	of >0° C to 6.0°	C Yes 🗹	No		NA 🗆	
5. Sample(s) in proper con	tainer(s)?		Yes 🗸	No			
6. Sufficient sample volume	e for indicated test(s))?	Yes 🗹	No			
7. Are samples (except VO	A and ONG) properly	y preserved?	Yes 🗹	No			
8. Was preservative added	to bottles?		Yes 🗌	No	✓	NA 🗌	
9. VOA vials have zero hea	adspace?		Yes 🗌	No		No VOA Vials 🗹	
10, Were any sample conta	iners received broke	n?	Yes 🗀	No		# of preserved bottles checked	
11. Does paperwork match to (Note discrepancies on o			Yes 🗸	No		for pH:	>12 unless noted)
12. Are matrices correctly id	entified on Chain of	Custody?	Yes 🗸	No		Adjusted?	
13. Is it clear what analyses			Yes 🔽	No		Observational laws	
14. Were all holding times a (If no, notify customer fo			Yes 🗹	No		Checked by:	
Special Handling (if a	pplicable)						
15. Was client notified of all		this order?	Yes 🗌	No		NA 🗹	_
Person Notified: By Whom: Regarding:			Date Via: eMail	Phone	Fax [_ In Person	
Client Instructions	·					<u> </u>	J
16. Additional remarks:			*				
17. Cooler Information Cooler No Temp 9	C Condition Se	eal Intact Sea	No Seal Date	Signed I	3v		
1 2.7	Good Yes						

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1 1	necessary,	samples subr	if necessary, samples submitted to Hall Environmental may be subconfracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.	ontracted to other acc	redited laboratorie	s. This serves as notice of this	possibilit	y. Any	sub-cor	tracted (lata will	be clear	y notate	d on the a	ınalytical	report.]



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

June 07, 2018

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

FAX

RE: Lucerne 1 OrderNo.: 1805G33

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 17 sample(s) on 5/30/2018 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-1

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:07:00 AM

 Lab ID:
 1805G33-001
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analys	t: Irm
Diesel Range Organics (DRO)	ND	9.2	mg/Kg	1	6/5/2018 6:05:54 PM	38438
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/5/2018 6:05:54 PM	38438
Surr: DNOP	102	70-130	%Rec	1	6/5/2018 6:05:54 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analys	t: RAA
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/2/2018 9:42:39 PM	38436
Surr: BFB	96.7	15-316	%Rec	1	6/2/2018 9:42:39 PM	38436
EPA METHOD 8021B: VOLATILES					Analys	t: RAA
Benzene	ND	0.024	mg/Kg	1	6/2/2018 9:42:39 PM	38436
Toluene	ND	0.048	mg/Kg	1	6/2/2018 9:42:39 PM	38436
Ethylbenzene	ND	0.048	mg/Kg	1	6/2/2018 9:42:39 PM	38436
Xylenes, Total	ND	0.097	mg/Kg	1	6/2/2018 9:42:39 PM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/2/2018 9:42:39 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-2

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:12:00 AM

 Lab ID:
 1805G33-002
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	16	9.2	mg/Kg	1	6/5/2018 7:19:03 PM	38438
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/5/2018 7:19:03 PM	38438
Surr: DNOP	102	70-130	%Rec	1	6/5/2018 7:19:03 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/2/2018 10:05:52 PM	38436
Surr: BFB	98.4	15-316	%Rec	1	6/2/2018 10:05:52 PM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/2/2018 10:05:52 PM	38436
Toluene	ND	0.049	mg/Kg	1	6/2/2018 10:05:52 PM	38436
Ethylbenzene	ND	0.049	mg/Kg	1	6/2/2018 10:05:52 PM	38436
Xylenes, Total	ND	0.098	mg/Kg	1	6/2/2018 10:05:52 PM	38436
Surr: 4-Bromofluorobenzene	103	80-120	%Rec	1	6/2/2018 10:05:52 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 20
	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

Lab Order **1805G33**Date Reported: 6/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-3

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:20:00 AM

 Lab ID:
 1805G33-003
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: Irm	
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/5/2018 7:43:31 PM	38438
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/5/2018 7:43:31 PM	38438
Surr: DNOP	100	70-130	%Rec	1	6/5/2018 7:43:31 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/2/2018 10:29:09 PM	38436
Surr: BFB	96.6	15-316	%Rec	1	6/2/2018 10:29:09 PM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/2/2018 10:29:09 PM	38436
Toluene	0.11	0.049	mg/Kg	1	6/2/2018 10:29:09 PM	38436
Ethylbenzene	ND	0.049	mg/Kg	1	6/2/2018 10:29:09 PM	38436
Xylenes, Total	0.12	0.098	mg/Kg	1	6/2/2018 10:29:09 PM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/2/2018 10:29:09 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 20
	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

Lab Order **1805G33**Date Reported: 6/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-4

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:26:00 AM

 Lab ID:
 1805G33-004
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR				Analyst	: Irm	
Diesel Range Organics (DRO)	35	9.2	mg/Kg	1	6/5/2018 8:07:47 PM	38438
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/5/2018 8:07:47 PM	38438
Surr: DNOP	102	70-130	%Rec	1	6/5/2018 8:07:47 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/2/2018 10:52:38 PM	38436
Surr: BFB	95.0	15-316	%Rec	1	6/2/2018 10:52:38 PM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/2/2018 10:52:38 PM	38436
Toluene	ND	0.047	mg/Kg	1	6/2/2018 10:52:38 PM	38436
Ethylbenzene	ND	0.047	mg/Kg	1	6/2/2018 10:52:38 PM	38436
Xylenes, Total	ND	0.093	mg/Kg	1	6/2/2018 10:52:38 PM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/2/2018 10:52:38 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-5

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:34:00 AM

 Lab ID:
 1805G33-005
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: Irm	
Diesel Range Organics (DRO)	47	9.8	mg/Kg	1	6/5/2018 8:32:09 PM	38438
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/5/2018 8:32:09 PM	38438
Surr: DNOP	106	70-130	%Rec	1	6/5/2018 8:32:09 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/2/2018 11:15:53 PM	38436
Surr: BFB	117	15-316	%Rec	1	6/2/2018 11:15:53 PM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.025	mg/Kg	1	6/2/2018 11:15:53 PM	38436
Toluene	ND	0.049	mg/Kg	1	6/2/2018 11:15:53 PM	38436
Ethylbenzene	ND	0.049	mg/Kg	1	6/2/2018 11:15:53 PM	38436
Xylenes, Total	ND	0.099	mg/Kg	1	6/2/2018 11:15:53 PM	38436
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	6/2/2018 11:15:53 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-6

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:43:00 AM

 Lab ID:
 1805G33-006
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: Irm	
Diesel Range Organics (DRO)	41	10	mg/Kg	1	6/5/2018 8:56:21 PM	38438
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/5/2018 8:56:21 PM	38438
Surr: DNOP	102	70-130	%Rec	1	6/5/2018 8:56:21 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/3/2018 12:49:08 AM	38436
Surr: BFB	94.8	15-316	%Rec	1	6/3/2018 12:49:08 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 12:49:08 AM	38436
Toluene	ND	0.049	mg/Kg	1	6/3/2018 12:49:08 AM	38436
Ethylbenzene	ND	0.049	mg/Kg	1	6/3/2018 12:49:08 AM	38436
Xylenes, Total	ND	0.098	mg/Kg	1	6/3/2018 12:49:08 AM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/3/2018 12:49:08 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 20
	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

Lab Order **1805G33**Date Reported: 6/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-7

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 9:51:00 AM

 Lab ID:
 1805G33-007
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/5/2018 9:20:39 PM	38438
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/5/2018 9:20:39 PM	38438
Surr: DNOP	99.8	70-130	%Rec	1	6/5/2018 9:20:39 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	:: RAA
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/3/2018 1:12:22 AM	38436
Surr: BFB	96.4	15-316	%Rec	1	6/3/2018 1:12:22 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/3/2018 1:12:22 AM	38436
Toluene	ND	0.046	mg/Kg	1	6/3/2018 1:12:22 AM	38436
Ethylbenzene	ND	0.046	mg/Kg	1	6/3/2018 1:12:22 AM	38436
Xylenes, Total	ND	0.093	mg/Kg	1	6/3/2018 1:12:22 AM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/3/2018 1:12:22 AM	38436

Oualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
C	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 20
	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

Lab Order **1805G33**Date Reported: 6/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-8

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:00:00 AM

 Lab ID:
 1805G33-008
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR			Analys	t: Irm		
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	6/5/2018 9:44:47 PM	38438
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/5/2018 9:44:47 PM	38438
Surr: DNOP	100	70-130	%Rec	1	6/5/2018 9:44:47 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analys	t: RAA
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	6/3/2018 1:35:34 AM	38436
Surr: BFB	94.8	15-316	%Rec	1	6/3/2018 1:35:34 AM	38436
EPA METHOD 8021B: VOLATILES					Analys	t: RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 1:35:34 AM	38436
Toluene	ND	0.048	mg/Kg	1	6/3/2018 1:35:34 AM	38436
Ethylbenzene	ND	0.048	mg/Kg	1	6/3/2018 1:35:34 AM	38436
Xylenes, Total	ND	0.095	mg/Kg	1	6/3/2018 1:35:34 AM	38436
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	6/3/2018 1:35:34 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 20
	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, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-9

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:10:00 AM

 Lab ID:
 1805G33-009
 Matrix:
 SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: Irm	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	6/5/2018 10:09:01 PM	38438
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/5/2018 10:09:01 PM	38438
Surr: DNOP	99.2	70-130	%Rec	1	6/5/2018 10:09:01 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/3/2018 1:58:50 AM	38436
Surr: BFB	95.9	15-316	%Rec	1	6/3/2018 1:58:50 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/3/2018 1:58:50 AM	38436
Toluene	ND	0.046	mg/Kg	1	6/3/2018 1:58:50 AM	38436
Ethylbenzene	ND	0.046	mg/Kg	1	6/3/2018 1:58:50 AM	38436
Xylenes, Total	ND	0.092	mg/Kg	1	6/3/2018 1:58:50 AM	38436
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	6/3/2018 1:58:50 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 9 of 20
	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	\mathbf{W}	Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-10

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:19:00 AM

 Lab ID:
 1805G33-010
 Matrix:
 SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.1	mg/Kg	1	6/5/2018 10:33:01 PM	38438
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/5/2018 10:33:01 PM	38438
Surr: DNOP	102	70-130	%Rec	1	6/5/2018 10:33:01 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/3/2018 2:22:08 AM	38436
Surr: BFB	97.4	15-316	%Rec	1	6/3/2018 2:22:08 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/3/2018 2:22:08 AM	38436
Toluene	ND	0.047	mg/Kg	1	6/3/2018 2:22:08 AM	38436
Ethylbenzene	ND	0.047	mg/Kg	1	6/3/2018 2:22:08 AM	38436
Xylenes, Total	ND	0.094	mg/Kg	1	6/3/2018 2:22:08 AM	38436
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	6/3/2018 2:22:08 AM	38436

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 10 of 20 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-11

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:25:00 AM

 Lab ID:
 1805G33-011
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: Irm	
Diesel Range Organics (DRO)	15	10	mg/Kg	1	6/5/2018 10:57:10 PM	38438
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	6/5/2018 10:57:10 PM	38438
Surr: DNOP	99.2	70-130	%Rec	1	6/5/2018 10:57:10 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/4/2018 2:28:11 PM	38436
Surr: BFB	101	15-316	%Rec	1	6/4/2018 2:28:11 PM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/4/2018 2:28:11 PM	38436
Toluene	ND	0.046	mg/Kg	1	6/4/2018 2:28:11 PM	38436
Ethylbenzene	ND	0.046	mg/Kg	1	6/4/2018 2:28:11 PM	38436
Xylenes, Total	ND	0.092	mg/Kg	1	6/4/2018 2:28:11 PM	38436
Surr: 4-Bromofluorobenzene	109	80-120	%Rec	1	6/4/2018 2:28:11 PM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 11 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-12

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:31:00 AM

 Lab ID:
 1805G33-012
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG			Analyst	: Irm		
Diesel Range Organics (DRO)	18	9.1	mg/Kg	1	6/5/2018 11:21:05 PM	38438
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	6/5/2018 11:21:05 PM	38438
Surr: DNOP	103	70-130	%Rec	1	6/5/2018 11:21:05 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/3/2018 3:08:58 AM	38436
Surr: BFB	97.5	15-316	%Rec	1	6/3/2018 3:08:58 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 3:08:58 AM	38436
Toluene	ND	0.047	mg/Kg	1	6/3/2018 3:08:58 AM	38436
Ethylbenzene	ND	0.047	mg/Kg	1	6/3/2018 3:08:58 AM	38436
Xylenes, Total	ND	0.095	mg/Kg	1	6/3/2018 3:08:58 AM	38436
Surr: 4-Bromofluorobenzene	105	80-120	%Rec	1	6/3/2018 3:08:58 AM	38436

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 12 of 20 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-13

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:36:00 AM

 Lab ID:
 1805G33-013
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG			Analyst	: Irm		
Diesel Range Organics (DRO)	23	9.7	mg/Kg	1	6/5/2018 11:45:12 PM	38438
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/5/2018 11:45:12 PM	38438
Surr: DNOP	105	70-130	%Rec	1	6/5/2018 11:45:12 PM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	6/3/2018 3:32:21 AM	38436
Surr: BFB	97.0	15-316	%Rec	1	6/3/2018 3:32:21 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 3:32:21 AM	38436
Toluene	ND	0.049	mg/Kg	1	6/3/2018 3:32:21 AM	38436
Ethylbenzene	ND	0.049	mg/Kg	1	6/3/2018 3:32:21 AM	38436
Xylenes, Total	ND	0.097	mg/Kg	1	6/3/2018 3:32:21 AM	38436
Surr: 4-Bromofluorobenzene	107	80-120	%Rec	1	6/3/2018 3:32:21 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 13 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-14

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:43:00 AM

 Lab ID:
 1805G33-014
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	6/6/2018 12:09:09 AM	38438
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/6/2018 12:09:09 AM	38438
Surr: DNOP	99.6	70-130	%Rec	1	6/6/2018 12:09:09 AM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/3/2018 3:55:33 AM	38436
Surr: BFB	98.3	15-316	%Rec	1	6/3/2018 3:55:33 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 3:55:33 AM	38436
Toluene	ND	0.047	mg/Kg	1	6/3/2018 3:55:33 AM	38436
Ethylbenzene	ND	0.047	mg/Kg	1	6/3/2018 3:55:33 AM	38436
Xylenes, Total	ND	0.095	mg/Kg	1	6/3/2018 3:55:33 AM	38436
Surr: 4-Bromofluorobenzene	107	80-120	%Rec	1	6/3/2018 3:55:33 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 14 of 20
	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, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-15

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:45:00 AM

 Lab ID:
 1805G33-015
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/6/2018 12:33:09 AM	38438
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/6/2018 12:33:09 AM	38438
Surr: DNOP	84.7	70-130	%Rec	1	6/6/2018 12:33:09 AM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	6/3/2018 4:18:42 AM	38436
Surr: BFB	97.5	15-316	%Rec	1	6/3/2018 4:18:42 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.024	mg/Kg	1	6/3/2018 4:18:42 AM	38436
Toluene	ND	0.047	mg/Kg	1	6/3/2018 4:18:42 AM	38436
Ethylbenzene	ND	0.047	mg/Kg	1	6/3/2018 4:18:42 AM	38436
Xylenes, Total	ND	0.095	mg/Kg	1	6/3/2018 4:18:42 AM	38436
Surr: 4-Bromofluorobenzene	104	80-120	%Rec	1	6/3/2018 4:18:42 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 15 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-16

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:52:00 AM

 Lab ID:
 1805G33-016
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG			Analyst	: Irm		
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	6/6/2018 12:57:05 AM	38438
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	6/6/2018 12:57:05 AM	38438
Surr: DNOP	88.2	70-130	%Rec	1	6/6/2018 12:57:05 AM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analyst	RAA
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/3/2018 6:15:27 AM	38436
Surr: BFB	107	15-316	%Rec	1	6/3/2018 6:15:27 AM	38436
EPA METHOD 8021B: VOLATILES					Analyst	: RAA
Benzene	ND	0.023	mg/Kg	1	6/3/2018 6:15:27 AM	38436
Toluene	ND	0.046	mg/Kg	1	6/3/2018 6:15:27 AM	38436
Ethylbenzene	ND	0.046	mg/Kg	1	6/3/2018 6:15:27 AM	38436
Xylenes, Total	ND	0.093	mg/Kg	1	6/3/2018 6:15:27 AM	38436
Surr: 4-Bromofluorobenzene	112	80-120	%Rec	1	6/3/2018 6:15:27 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 16 of 20
	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

Lab Order **1805G33**Date Reported: **6/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17

 Project:
 Lucerne 1
 Collection Date: 5/29/2018 10:58:00 AM

 Lab ID:
 1805G33-017
 Matrix: SOIL
 Received Date: 5/30/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analys	t: Irm
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	6/6/2018 1:21:07 AM	38438
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	6/6/2018 1:21:07 AM	38438
Surr: DNOP	80.7	70-130	%Rec	1	6/6/2018 1:21:07 AM	38438
EPA METHOD 8015D: GASOLINE RANGE					Analys	t: RAA
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	6/3/2018 6:38:50 AM	38436
Surr: BFB	98.7	15-316	%Rec	1	6/3/2018 6:38:50 AM	38436
EPA METHOD 8021B: VOLATILES					Analys	t: RAA
Benzene	ND	0.023	mg/Kg	1	6/3/2018 6:38:50 AM	38436
Toluene	ND	0.046	mg/Kg	1	6/3/2018 6:38:50 AM	38436
Ethylbenzene	ND	0.046	mg/Kg	1	6/3/2018 6:38:50 AM	38436
Xylenes, Total	ND	0.093	mg/Kg	1	6/3/2018 6:38:50 AM	38436
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	1	6/3/2018 6:38:50 AM	38436

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 17 of 20
	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, Inc.

50

4.6

4.3

9.3

WO#: **1805G33**

07-Jun-18

Client: Rule Engineering LLC

Project: Lucerne 1

Diesel Range Organics (DRO)

Surr: DNOP

Surr: DNOP

Sample ID MB-38438 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 38438 RunNo: 51727 Analysis Date: 6/5/2018 Prep Date: 6/1/2018 SeqNo: 1689440 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 97.0 70 9.7 10.00 130 Sample ID LCS-38438 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 38438 RunNo: 51727 Prep Date: 6/1/2018 Analysis Date: 6/5/2018 SeqNo: 1689441 Units: mg/Kg Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 10 98.4 49 50.00 70 130 Surr: DNOP 4.6 5.000 92.5 70 130 Sample ID 1805G33-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: SC-1 Batch ID: 38438 RunNo: 51727 Prep Date: 6/1/2018 Analysis Date: 6/5/2018 SeqNo: 1690065 Units: mg/Kg Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Sample ID	1805G33-001AMSE	SampType	: MSD	Tes	tCode: E	PA Method	8015M/D: Di	esel Rang	e Organics	•
Client ID:	SC-1	Batch ID	38438	F	RunNo: 5	1727				
Prep Date:	6/1/2018	Analysis Date	6/5/2018	\$	SeqNo: 1	690066	Units: mg/k	(g		
Analyte		Result P	QL SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range C)rganics (DRO)	50	9.2 46.21	5.456	96.5	62	120	0.561	20	

5.456

95.1

98.0

94.1

62

70

70

120

130

130

0

46.60

4.660

4.621

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

Page 18 of 20

0

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1805G33**

07-Jun-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1805G33-002AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-2 Batch ID: 38436 RunNo: 51695

Prep Date: 6/1/2018 Analysis Date: 6/2/2018 SeqNo: 1686833 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 4.6 0 28 22.98 121 77.8 128 Surr: BFB 1000 919.1 113 15 316

Sample ID 1805G33-002AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-2 Batch ID: 38436 RunNo: 51695

Prep Date: 6/1/2018 Analysis Date: 6/2/2018 SeqNo: 1686834 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 4.6 23.17 113 77.8 128 5.68 20 Surr: BFB 1000 926.8 113 15 316 0

Sample ID LCS-38436 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range Client ID: LCSS Batch ID: 38436 RunNo: 51695 Prep Date: 6/1/2018 Analysis Date: 6/2/2018 SeqNo: 1686872 Units: mg/Kg %REC SPK value SPK Ref Val %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual

 Gasoline Range Organics (GRO)
 28
 5.0
 25.00
 0
 112
 75.9
 131

 Surr: BFB
 1100
 1000
 109
 15
 316

Sample ID MB-38436 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 38436 RunNo: 51695

Prep Date: 6/1/2018 Analysis Date: 6/2/2018 SeqNo: 1686874 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 980 1000 98.1 15 316

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

antitation limits Page 19 of 20

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1805G33**

07-Jun-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1805G33-001AMS	SampT	ype: MS	3	Tes	tCode: El	PA Method	8021B: Vola	tiles		
Client ID: SC-1	Batch	ID: 384	436	F	RunNo: 5	1695				
Prep Date: 6/1/2018	Analysis D	ate: 6/ 2	2/2018	S	SeqNo: 1	686909	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.025	0.9823	0	98.4	68.5	133			
Toluene	1.0	0.049	0.9823	0	103	75	130			
Ethylbenzene	1.0	0.049	0.9823	0	105	79.4	128			
Xylenes, Total	3.2	0.098	2.947	0.01209	107	77.3	131			
Surr: 4-Bromofluorobenzene	1.0		0.9823		107	80	120			

Sample ID 1805G33-001AM	SD SampT	ype: MS	SD	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: SC-1	Batch	1D: 384	436	R	RunNo: 5	1695				
Prep Date: 6/1/2018	Analysis D	ate: 6/	2/2018	S	SeqNo: 1	686910	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.97	0.024	0.9681	0	99.9	68.5	133	0.0300	20	
Toluene	1.0	0.048	0.9681	0	104	75	130	0.101	20	
Ethylbenzene	1.0	0.048	0.9681	0	106	79.4	128	1.26	20	
Xylenes, Total	3.1	0.097	2.904	0.01209	107	77.3	131	1.03	20	
Surr: 4-Bromofluorobenzene	1.0		0.9681		105	80	120	0	0	

Sample ID LCS-38436	SampT	ype: LC	S	Tes	tCode: El	PA Method	8021B: Volat	tiles		
Client ID: LCSS	Batch	n ID: 384	436	R	RunNo: 5	1695				
Prep Date: 6/1/2018	Analysis D	ate: 6/	2/2018	S	SeqNo: 1	686927	Units: mg/K	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.1	77.3	128			
Toluene	0.99	0.050	1.000	0	99.3	79.2	125			
Ethylbenzene	0.99	0.050	1.000	0	99.1	80.7	127			
Xylenes, Total	3.1	0.10	3.000	0	102	81.6	129			
Surr: 4-Bromofluorobenzene	1.1		1.000		105	80	120			

Sample ID MB-38436	SampT	уре: МЕ	BLK	Tes	tCode: El	PA Method	8021B: Volat	iles		
Client ID: PBS	Batch	n ID: 38	436	R	RunNo: 5	1695				
Prep Date: 6/1/2018	Analysis D	oate: 6/	2/2018	S	SeqNo: 1	686929	Units: mg/K	ίg		
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		106	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 Detection Limit

W Sample container temperature is out of limit as specified

Page 20 of 20



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:	1805G33	_	RcptNo	o: 1
Received By: Anne Thorne	5/30/2018 6:50:00 AM		Anne A. Anne A.		
Completed By: Anne Thorne	5/31/2018 2:08:35 PM		an A		
Reviewed By: ENM	5/31/18		21 35.		
mu 5/3/1/8					
Chain of Custody					
1. Is Chain of Custody complete?		Yes 🗹	No	Not Present	
2. How was the sample delivered?		Courier			
<u>Log In</u>					
3. Was an attempt made to cool the samples?		Yes 🔽	No 🗌	NA 🗀	
4. Were all samples received at a temperature o	f >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 🗌		
$\boldsymbol{7}_{\cdot}$ 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 🗹	# of preserved	
11. Does paperwork match bottle labels? (Note discrepancies on chain of custody)		Yes 🗹	No 🗆	bottles checked for pH:	r 22 miless noted)
12. Are matrices correctly identified on Chain of C	ustody?	Yes 🗸	No 🗌	Adjusted?	
13. Is it clear what analyses were requested?		Yes 🔽	No 🗌	77 10	
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 th	is order?	Yes _	No 🗆	NA 🗹	
Person Notified:	Date				
By Whom:	Via:	eMail _	Phone Fax	n Person	
Regarding:				eran managaran andalahan kalan andarah di utusah Militari.	
Client Instructions:			***************************************	ninin manyatatan da	
16. Additional remarks:				··· · · · · · · · · · · · · · · · · ·	
17. Cooler Information Cooler No Temp °C Condition Sea 1 1.2 Good Yes	I Intact Seal No Seal	eal Date	Signed By		

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	20/17	1820	Mon	N	Common Oy.	line	JUST 3019)	5	1						



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

July 17, 2018

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

TEL. (303) 323

FAX

RE: Lucerne 1 OrderNo.: 1807695

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 7/13/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1807695**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/17/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-1

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 1:38:00 PM

 Lab ID:
 1807695-001
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analyst	: Irm
Diesel Range Organics (DRO)	19	9.8	mg/Kg	1	7/16/2018 3:20:35 PM	39206
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	7/16/2018 3:20:35 PM	39206
Surr: DNOP	87.8	70-130	%Rec	1	7/16/2018 3:20:35 PM	39206
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	7/16/2018 9:43:40 PM	39201
Surr: BFB	104	15-316	%Rec	1	7/16/2018 9:43:40 PM	39201
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	7/16/2018 9:43:40 PM	39201
Toluene	ND	0.048	mg/Kg	1	7/16/2018 9:43:40 PM	39201
Ethylbenzene	ND	0.048	mg/Kg	1	7/16/2018 9:43:40 PM	39201
Xylenes, Total	ND	0.096	mg/Kg	1	7/16/2018 9:43:40 PM	39201
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	7/16/2018 9:43:40 PM	39201

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 1 of 9 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RL Reporting Detection Limit % Recovery outside of range due to dilution or matrix Sample container temperature is out of limit as specified

Lab Order **1807695**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/17/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-2

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 1:44:00 PM

 Lab ID:
 1807695-002
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	13	10	mg/Kg	1	7/16/2018 3:42:35 PM	39206
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/16/2018 3:42:35 PM	39206
Surr: DNOP	92.2	70-130	%Rec	1	7/16/2018 3:42:35 PM	39206
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	5.2	5.0	mg/Kg	1	7/16/2018 10:06:55 PM	39201
Surr: BFB	126	15-316	%Rec	1	7/16/2018 10:06:55 PM	39201
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.025	mg/Kg	1	7/16/2018 10:06:55 PM	39201
Toluene	ND	0.050	mg/Kg	1	7/16/2018 10:06:55 PM	39201
Ethylbenzene	ND	0.050	mg/Kg	1	7/16/2018 10:06:55 PM	39201
Xylenes, Total	0.16	0.099	mg/Kg	1	7/16/2018 10:06:55 PM	39201
Surr: 4-Bromofluorobenzene	102	80-120	%Rec	1	7/16/2018 10:06:55 PM	39201

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 9
	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

Removed by excavation -HW

Analytical ReportLab Order **1807695**

Date Reported: 7/17/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-3

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 1:50:00 PM

 Lab ID:
 1807695-003
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	39	9.9		mg/Kg	1	7/16/2018 4:04:34 PM	39206
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/16/2018 4:04:34 PM	39206
Surr: DNOP	94.3	70-130		%Rec	1	7/16/2018 4:04:34 PM	39206
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	79	9.9		mg/Kg	2	7/16/2018 10:30:12 PM	39201
Surr: BFB	421	15-316	S	%Rec	2	7/16/2018 10:30:12 PM	39201
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.050		mg/Kg	2	7/16/2018 10:30:12 PM	39201
Toluene	ND	0.099		mg/Kg	2	7/16/2018 10:30:12 PM	39201
Ethylbenzene	0.32	0.099		mg/Kg	2	7/16/2018 10:30:12 PM	39201
Xylenes, Total	2.9	0.20		mg/Kg	2	7/16/2018 10:30:12 PM	39201
Surr: 4-Bromofluorobenzene	118	80-120		%Rec	2	7/16/2018 10:30:12 PM	39201

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Analyte detected below quantitation limits Page 3 of 9 Н Holding times for preparation or analysis exceeded J ND Not Detected at the Reporting Limit P Sample pH Not In Range PQL Practical Quanitative Limit RLReporting Detection Limit Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Removed by excavation -HW

Analytical ReportLab Order **1807695**

Date Reported: 7/17/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-8

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:15:00 PM

 Lab ID:
 1807695-004
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst	: Irm
Diesel Range Organics (DRO)	170	9.9	mg/Kg	1	7/16/2018 4:26:42 PM	39206
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	7/16/2018 4:26:42 PM	39206
Surr: DNOP	96.2	70-130	%Rec	1	7/16/2018 4:26:42 PM	39206
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	15	4.7	mg/Kg	1	7/16/2018 10:53:30 PM	39201
Surr: BFB	252	15-316	%Rec	1	7/16/2018 10:53:30 PM	39201
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.049	0.024	mg/Kg	1	7/16/2018 10:53:30 PM	39201
Toluene	ND	0.047	mg/Kg	1	7/16/2018 10:53:30 PM	39201
Ethylbenzene	0.083	0.047	mg/Kg	1	7/16/2018 10:53:30 PM	39201
Xylenes, Total	0.34	0.094	mg/Kg	1	7/16/2018 10:53:30 PM	39201
Surr: 4-Bromofluorobenzene	107	80-120	%Rec	1	7/16/2018 10:53:30 PM	39201

-				
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 9
	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

Removed by excavation -HW

Analytical ReportLab Order **1807695**

Date Reported: 7/17/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-9

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:24:00 PM

 Lab ID:
 1807695-005
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	110	10	mg/Kg	1	7/16/2018 4:48:35 PM	39206
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/16/2018 4:48:35 PM	39206
Surr: DNOP	97.6	70-130	%Rec	1	7/16/2018 4:48:35 PM	39206
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	14	4.8	mg/Kg	1	7/16/2018 11:16:47 PM	39201
Surr: BFB	229	15-316	%Rec	1	7/16/2018 11:16:47 PM	39201
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	7/16/2018 11:16:47 PM	39201
Toluene	ND	0.048	mg/Kg	1	7/16/2018 11:16:47 PM	39201
Ethylbenzene	ND	0.048	mg/Kg	1	7/16/2018 11:16:47 PM	39201
Xylenes, Total	0.14	0.097	mg/Kg	1	7/16/2018 11:16:47 PM	39201
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	1	7/16/2018 11:16:47 PM	39201

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 9
	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

Lab Order **1807695**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 7/17/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-10

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:36:00 PM

 Lab ID:
 1807695-006
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/16/2018 5:10:43 PM	39206
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/16/2018 5:10:43 PM	39206
Surr: DNOP	91.6	70-130	%Rec	1	7/16/2018 5:10:43 PM	39206
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	7/16/2018 11:40:06 PM	39201
Surr: BFB	89.3	15-316	%Rec	1	7/16/2018 11:40:06 PM	39201
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	7/16/2018 11:40:06 PM	39201
Toluene	ND	0.047	mg/Kg	1	7/16/2018 11:40:06 PM	39201
Ethylbenzene	ND	0.047	mg/Kg	1	7/16/2018 11:40:06 PM	39201
Xylenes, Total	ND	0.095	mg/Kg	1	7/16/2018 11:40:06 PM	39201
Surr: 4-Bromofluorobenzene	101	80-120	%Rec	1	7/16/2018 11:40:06 PM	39201

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 9
	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, Inc.

WO#: 1807695

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39206 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 39206 RunNo: 52724

Analysis Date: 7/16/2018 Prep Date: 7/13/2018 SeqNo: 1731136 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 10.00 90.7 70 9.1 130

Sample ID LCS-39206 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 39206 RunNo: 52724

Prep Date: 7/13/2018 Analysis Date: 7/16/2018 SeqNo: 1731137 Units: mg/Kg

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) 48 10 95.9 70 50.00 130 Surr: DNOP 4.3 5.000 85.8 70 130

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 7 of 9

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807695

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39201 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 39201 RunNo: 52729

Prep Date: 7/13/2018 Analysis Date: 7/16/2018 SeqNo: 1731622 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) ND 5.0

1000 Surr: BFB 910 91.0 15 316

Sample ID LCS-39201 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 39201 RunNo: 52729

Analysis Date: 7/16/2018 Prep Date: 7/13/2018 SeqNo: 1731623 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) 5.0 25.00 108 75.9 131 Surr: BFB 980 1000 98.5 15 316

TestCode: EPA Method 8015D: Gasoline Range Sample ID 1807695-001AMS SampType: MS

Client ID: SC-1 Batch ID: 39201 RunNo: 52729

Prep Date: 7/13/2018 Analysis Date: 7/16/2018 SeqNo: 1731627 Units: mg/Kg

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual

Gasoline Range Organics (GRO) 30 23.97 1.996 115 77.8 128 Surr: BFB 1200 958.8 127 316 15

Sample ID 1807695-001AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-1 Batch ID: 39201 RunNo: 52729

Analysis Date: 7/16/2018 Prep Date: 7/13/2018 SeqNo: 1731628 Units: mg/Kg

%REC Result **PQL** SPK value SPK Ref Val LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 29 4.7 23.32 1.996 114 77.8 128 3.52 20 Surr: BFB 1100 932.8 117 15 316 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 8 of 9

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1807695

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Surr: 4-Bromofluorobenzene

Sample ID MB-39201 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: 39201 RunNo: 52729

Prep Date: 7/13/2018 Analysis Date: 7/16/2018 SeqNo: 1731659 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 1.000 101 80 120

Sample ID LCS-39201 SampType: LCS TestCode: EPA Method 8021B: Volatiles Client ID: LCSS Batch ID: 39201 RunNo: 52729 Analysis Date: 7/16/2018 SeqNo: 1731660 Prep Date: 7/13/2018 Units: mg/Kg Analyte **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 0.95 0.025 1.000 0 95.2 77.3 128 Benzene Toluene 0.98 0.050 1.000 0 97.6 79.2 125 Ethylbenzene 0.95 0.050 1.000 0 95.3 80.7 127 98.0 Xylenes, Total 2.9 0.10 3.000 0 81.6 129

103

80

120

Sample ID 1807695-002AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

1.000

Client ID: SC-2 Batch ID: 39201 RunNo: 52729

1.0

Prep Date: 7/13/2018	Analysis D)ate: 7/	16/2018	S	SeqNo: 1	731666	Units: mg/K	ξg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.92	0.024	0.9542	0.01042	95.3	68.5	133			
Toluene	0.96	0.048	0.9542	0	100	75	130			
Ethylbenzene	0.97	0.048	0.9542	0.03115	98.0	79.4	128			
Xylenes, Total	3.0	0.095	2.863	0.1617	99.5	77.3	131			
Surr: 4-Bromofluorobenzene	1.0		0.9542		109	80	120			

Sample ID 1807695-002AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SC-2 Batch ID: 39201 RunNo: 52729

0			_0.	•						
Prep Date: 7/13/2018	Analysis D	Date: 7/	16/2018	8	SeqNo: 1	731667	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	0.9814	0.01042	96.4	68.5	133	3.96	20	
Toluene	1.0	0.049	0.9814	0	102	75	130	4.21	20	
Ethylbenzene	1.0	0.049	0.9814	0.03115	99.6	79.4	128	4.25	20	
Xylenes, Total	3.1	0.098	2.944	0.1617	101	77.3	131	3.85	20	
Surr: 4-Bromofluorobenzene	1.1		0.9814		109	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 9 of 9



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 ENGIN	EERING LL	Work Order Num	nber: 1807695	ı	RcptNo	o: 1
Received By:	Anne Thorne)	7/13/2018 8:05:00	AM	Anne St	L_	
Completed By	: Anne Thorne)	7/13/2018 9:28:48	AM	anne A		
Reviewed By:	WZO	113118			ane si		JAB 07/13/18
Chain of Cu	<u>ıstody</u>						
1. Is Chain of	Custody complete	?		Yes 🗹	No 🗌	Not Present	
2. How was th	ne sample delivere	d?		<u>Courier</u>			
<u>Log In</u>							
3. Was an atte	empt made to cool	the samples?		Yes 🗸	No 🗀	NA L	
4. Were all sa	mples received at	a temperature of	>0° C to 6.0°C	Yes 🗹	No 🗆	na 🗆	
5. Sample(s) i	in proper container	r(s)?		Yes 🗹	No 🗆		
6. Sufficient sa	ample volume for i	ndicated test(s)?		Yes 🗹	No 🗌		
7. Are sample:	s (except VOA and	ONG) properly	preserved?	Yes 🗹	No 🗆		
8. Was preser	vative added to bo	ttles?		Yes	No 🗹	NA \square	
9. VOA vials h	ave zero headspac	ce?		Yes 🗌	No 🗌	No VOA Vials 🗹	1
10. Were any s	ample containers	received broken?	,	Yes	No 🗹	# of preserved	X311
	work match bottle			Yes 🔽	No 🗆	bottles checked for pH:	or >12 unless noted)
	s correctly identifie		ustody?	Yes 🗸	No 🗌	Adjusted?	(17
	nat analyses were		·	Yes 🗹	No 🗌		3
14. Were all hol	ding times able to customer for auth	be met?		Yes 🗹	No 🗌	Checked by:	
	dling (if applic	•					
	notified of all discr		s order?	Yes 🗌	No 🗆	NA 🗹	
Perso	on Notified:		Date	· [7	
By W	hom:		Via:	eMail [Phone Fax	x 🔲 In Person	
Rega	rding:						
Client	t Instructions:						
16. Additional	remarks:						_
17. Cooler Inf	ormation_						
Cooler N			I Intact Seal No	Seal Date	Signed By		
1	2.0 Go	ood Yes	Was a second				

	HALL ENVIRONMENTAL	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	(†C)	(SV)	. э) н ОЯ(МIS	HqT	(GR +182) d 41 d 50 d 50 d 50 d 60 d 60 d 60 d 60 d 60 d 60 d 60 d 6	TEX + MTE TPH 8015B PH (Methor PH's (8310 Monions (F,Cl Monions (F,Cl Mo	1				7					Remarks:	
Turn-Around Time:	Z∕Standard □ Rush	Project Name:	LALPIND, #1	Project #:		Project Manager:	11001	FIEUTRE! LADOS	Sampler: Justin Little	Sample Temperature: \$-0-6-10=2.0	Container Preservative HEAL No.	102 612 (120) reals (120)		802	h92	20	10 de				Received by: () Michael Mile 1/2/18 1602	eceived by Date Time
Chain-of-Custody Record	$\overline{\Box}$		Mailing Address: 501 Air 1014 Drive	401	200 = 195 797 J 9484	salpt 10 na Heary needbay Con	age: O	☐ Level 4 (Full Validation)	Accreditation S		Matrix Sample Request ID	1 1-15 100 801 1	2-75 1 hhs	6-75 (356)	2-75 5141		J 1470 " 2-10			7,	Relinquished, by: Left of Manual Control of Man	Time: Refinquished by:



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

July 17, 2018

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

FAX

RE: Lucerne 1 OrderNo.: 1807688

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/13/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1807688**Date Reported: **7/17/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-4

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 1:58:00 PM

 Lab ID:
 1807688-001
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch	1
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: AG	
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	7/13/2018 10:19:19 AM A5267	78
Surr: BFB	110	70-130	%Rec	1	7/13/2018 10:19:19 AM A5267	78
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: Irm	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/13/2018 12:05:04 PM 39192	2
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/13/2018 12:05:04 PM 39192	2
Surr: DNOP	103	70-130	%Rec	1	7/13/2018 12:05:04 PM 39192	2
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: AG	
Benzene	ND	0.019	mg/Kg	1	7/13/2018 10:19:19 AM S5267	78
Toluene	ND	0.038	mg/Kg	1	7/13/2018 10:19:19 AM S5267	78
Ethylbenzene	ND	0.038	mg/Kg	1	7/13/2018 10:19:19 AM S5267	78
Xylenes, Total	ND	0.075	mg/Kg	1	7/13/2018 10:19:19 AM S5267	78
Surr: 4-Bromofluorobenzene	124	70-130	%Rec	1	7/13/2018 10:19:19 AM S5267	78
Surr: Toluene-d8	95.4	70-130	%Rec	1	7/13/2018 10:19:19 AM S5267	78

-				
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 7
	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

Lab Order **1807688**

Date Reported: 7/17/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-5

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:11:00 PM

 Lab ID:
 1807688-002
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst:	AG
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	7/13/2018 10:42:24 AM	A52678
Surr: BFB	111	70-130	%Rec	1	7/13/2018 10:42:24 AM	A52678
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst:	Irm
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	7/13/2018 12:27:06 PM	39192
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/13/2018 12:27:06 PM	39192
Surr: DNOP	102	70-130	%Rec	1	7/13/2018 12:27:06 PM	39192
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst:	AG
Benzene	ND	0.019	mg/Kg	1	7/13/2018 10:42:24 AM	S52678
Toluene	ND	0.038	mg/Kg	1	7/13/2018 10:42:24 AM	S52678
Ethylbenzene	ND	0.038	mg/Kg	1	7/13/2018 10:42:24 AM	S52678
Xylenes, Total	ND	0.076	mg/Kg	1	7/13/2018 10:42:24 AM	S52678
Surr: 4-Bromofluorobenzene	124	70-130	%Rec	1	7/13/2018 10:42:24 AM	S52678
Surr: Toluene-d8	92.6	70-130	%Rec	1	7/13/2018 10:42:24 AM	S52678

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 7
	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

Lab Order 1807688

Date Reported: 7/17/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-6

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:22:00 PM

 Lab ID:
 1807688-003
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst:	AG
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	7/13/2018 11:05:36 AM	A52678
Surr: BFB	111	70-130	%Rec	1	7/13/2018 11:05:36 AM	A52678
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst:	Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	7/13/2018 12:49:08 PM	39192
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	7/13/2018 12:49:08 PM	39192
Surr: DNOP	102	70-130	%Rec	1	7/13/2018 12:49:08 PM	39192
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst:	AG
Benzene	ND	0.017	mg/Kg	1	7/13/2018 11:05:36 AM	S52678
Toluene	ND	0.033	mg/Kg	1	7/13/2018 11:05:36 AM	S52678
Ethylbenzene	ND	0.033	mg/Kg	1	7/13/2018 11:05:36 AM	S52678
Xylenes, Total	ND	0.066	mg/Kg	1	7/13/2018 11:05:36 AM	S52678
Surr: 4-Bromofluorobenzene	125	70-130	%Rec	1	7/13/2018 11:05:36 AM	S52678
Surr: Toluene-d8	94.0	70-130	%Rec	1	7/13/2018 11:05:36 AM	S52678

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7
	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

Lab Order **1807688**Date Reported: **7/17/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-7

 Project:
 Lucerne 1
 Collection Date: 7/12/2018 2:02:00 PM

 Lab ID:
 1807688-004
 Matrix: SOIL
 Received Date: 7/13/2018 8:05:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	AG
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	7/13/2018 11:28:46 AM	A52678
Surr: BFB	110	70-130	%Rec	1	7/13/2018 11:28:46 AM	A52678
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	7/13/2018 1:11:16 PM	39192
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	7/13/2018 1:11:16 PM	39192
Surr: DNOP	104	70-130	%Rec	1	7/13/2018 1:11:16 PM	39192
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	AG
Benzene	ND	0.019	mg/Kg	1	7/13/2018 11:28:46 AM	S52678
Toluene	ND	0.038	mg/Kg	1	7/13/2018 11:28:46 AM	S52678
Ethylbenzene	ND	0.038	mg/Kg	1	7/13/2018 11:28:46 AM	S52678
Xylenes, Total	ND	0.077	mg/Kg	1	7/13/2018 11:28:46 AM	S52678
Surr: 4-Bromofluorobenzene	124	70-130	%Rec	1	7/13/2018 11:28:46 AM	S52678
Surr: Toluene-d8	92.6	70-130	%Rec	1	7/13/2018 11:28:46 AM	S52678

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 7
	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, Inc.

WO#: 1807688

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39192 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 39192 RunNo: 52681 Analysis Date: 7/13/2018 Prep Date: 7/13/2018 SeqNo: 1729526 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 70 9.5 10.00 94.9 130 Sample ID LCS-39192 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39192 RunNo: 52681 Prep Date: 7/13/2018 Analysis Date: 7/13/2018 SeqNo: 1729527 Units: mg/Kg Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 46 10 70 50.00 92.3 130 Surr: DNOP 4.6 5.000 91.5 70 130 Sample ID 1807688-004AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: SC-7	Batch	ID: 39	192	R	2681					
Prep Date: 7/13/2018	Analysis D	ate: 7/	13/2018	S	SeqNo: 1	730815	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	51	10	50.10	0	102	62	120			
Surr: DNOP	4.8		5.010		95.2	70	130			

Sample ID 1807688-004AMSE	SampTy	/pe: MS	SD	Tes	tCode: El	PA Method	8015M/D: Die	esel Rang	e Organics	
Client ID: SC-7	Batch	ID: 39	192	F	RunNo: 5	2681				
Prep Date: 7/13/2018	Analysis Date: 7/13/2018			SeqNo: 1730816			Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	57	10	49.95	0	114	62	120	11.0	20	
Surr: DNOP	4.8		4 995		96.5	70	130	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 5 of 7

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807688**

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID rb SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List **PBS** Client ID: Batch ID: **\$52678** RunNo: 52678 Prep Date: Analysis Date: 7/13/2018 SeqNo: 1729753 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 0.56 0.5000 112 70 130 Surr: Toluene-d8 0.49 0.5000 98.4 70 130

Sample ID 1807688-002ams	SampT	уре: М	64	Tes	d 8260B: Volatiles Short List						
Client ID: SC-5	Batcl	n ID: S5	2678	RunNo: 52678							
Prep Date:	Analysis D	oate: 7/	13/2018	5	SeqNo: 1	730197	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.75	0.019	0.7628	0	98.1	80	120				
Toluene	0.77	0.038	0.7628	0	101	80	120				
Ethylbenzene	0.79	0.038	0.7628	0	103	82	121				
Xylenes, Total	2.4	0.076	2.288	0.01778	104	80.2	120				
Surr: 4-Bromofluorobenzene	0.40		0.3814		104	70	130				
Surr: Toluene-d8	0.35		0.3814		92.4	70	130				

Sample ID 1807688-002ams	d Samp	Type: MS	SD4	TestCode: EPA Method 8260B: Volatiles Short List										
Client ID: SC-5	Client ID: SC-5 Batch ID: S52678						RunNo: 52678							
Prep Date:	Analysis Date: 7/13/2018			9	SeqNo: 1	730198	Units: mg/k							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual				
Benzene	0.75	0.019	0.7628	0	97.9	80	120	0.135	20					
Toluene	0.75	0.038	0.7628	0	99.0	80	120	1.62	20					
Ethylbenzene	0.79	0.038	0.7628	0	103	82	121	0.0794	20					
Xylenes, Total	2.4	0.076	2.288	0.01778	105	80.2	120	0.629	20					
Surr: 4-Bromofluorobenzene	0.41		0.3814		107	70	130	0	0					
Surry Toluene-d8	0.35		0 3814		924	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 Detection Limit

W Sample container temperature is out of limit as specified

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: **1807688**

17-Jul-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 2.5ug gro Ics SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: LCSS Batch ID: **A52678** RunNo: 52678 Prep Date: Analysis Date: 7/13/2018 SeqNo: 1729480 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) O 26 5.0 25.00 105 70 130 Surr: BFB 440 500.0 88.4 70 130 Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS Batch ID: **A52678** RunNo: 52678 Analysis Date: 7/13/2018 Prep Date: SeqNo: 1729481 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 500 500.0 997 70 130

Sample ID 1807688-001ams SampType: MS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-4 Batch ID: A52678 RunNo: 52678 SeqNo: 1730195 Prep Date: Analysis Date: 7/13/2018 Units: mg/Kg SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result **PQL** HighLimit Qual Gasoline Range Organics (GRO) 19 18.84 102 64.7 142 Surr: BFB 370 376.8 97.1 70 130

Sample ID 1807688-001amsd SampType: MSD TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-4 Batch ID: A52678 RunNo: 52678 Analysis Date: 7/13/2018 Prep Date: SeqNo: 1730196 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 19 3.8 18.84 101 64.7 142 0.867 20 Λ Surr: BFB 370 376.8 97.3 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

D C 1 HN I D

Page 7 of 7

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified



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 Na	ame:	RULE ENG	INEERING LL	Work Order	Number:	1807	688			Rcp	tNo:	1 .
Received	l By:	Anne Thor	ne	7/13/2018 8:0	5:00 AM			Ann	. A.	_		
Complete Reviewed Lalse	d Bv:	Anne Thor ENM		7/13/2018 8:2 7/13/18 7	2:34 AM			Am	. Sh. . Sh.	~		
Chain o	f Cust	tody										
1. Is Cha	in of Cu	stody comple	ete?			Yes	\checkmark	No		Not Present [
2. How w	as the	sample delive	ered?			Cour	<u>ier</u>					
<u>Log In</u> 3. Was a	n attem	pt made to co	ool the samples?			Yes	✓	No		NA [
4. Were a	ill samp	les received	at a temperature c	of >0° C to 6.0°	С	Yes	✓	No		NA [
5. Sample	e(s) in p	roper contair	ner(s)?			Yes	~	No				
6. Sufficie	ent samı	ole volume fo	or indicated test(s)	?		Yes	✓	No				
-	-		and ONG) properly			Yes	<u></u>	No				
_		ive added to		•		Yes		No	\checkmark	NA [
9. VOA via	als have	e zero headsį	pace?			Yes		No		No VOA Vials ■		
10. Were a	any sam	ple containe	rs received broken	?		Yes		No	•	# of preserved		-
•	•	rk match bott ncies on chai	ile labels? in of custody)			Yes	✓	No		bottles checked for pH:	2 or >	▶12 unless noted)
· ·	-		ified on Chain of C	ustody?		Yes	✓	No		Adjusted?		
13. Is it clea	ar what	analyses we	re requested?		,	Yes	\checkmark	No				
		g times able stomer for au			,	Yes	✓	No		Checked by	<i>r</i> :	
Special H	landli	ng (if appi	licable)									
15. Was cl	ient not	ified of all dis	crepancies with th	nis order?	-	Yes		No		NA S		
F	Person I	Notified:			Date	************				i e		
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	Client In:	structions:									*	
16. Additio	onal ren	narks:										
17. <u>Coole</u> God	r Infom der No	Temp ℃	Condition Sea	al Intact Seal	No Se	al Da	te	Signed	Ву			
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	ANALYSIS LABORATORY	ll.com	, NM 87109	505-345-4107	est					/O/	AOV) 808S8 -imə <i>2</i>) 07S8											LILL OF Page 1	
	YSIS L	www.hallenvironmental.com	Albuquerque, NM 87109	Fax 505-3						ON'	RCRA 8 Met Anions (F,Cl 8081 Pesticio	<u> </u>					 · · · · · · · · · · · · · · · · · · ·			-		ill be cleanly notate	
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Turn-Around Time:	☐ Standard		LUCELD	Project #:		Project Manager:		HOOK	Sampler:	15 ER LINCX	A-c7(13/0 Container Type and #	402 4/455		9	∌							Received by:	
Chain-of-Custody Record	Endin coning, Le	7	Mailing Address: 301 Aimon Daix Suite 205	1040	9460	email or Fax#: juster all Dutengine Brun, CDM)	☐ Level 4 (Full Validation)			Sample Request ID	h-75	2-75	5,76	2-75						•	Time: Relinquished by: Lob	
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	Client:		Mailing	Farming	Phone #	email	QA/QC	☑ Standard	Accreditation □ NELAP		Date	81/2/1	-)							7/12/6 Date:	



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

August 03, 2018

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

TEE. (303).

FAX

RE: Lucerne 1 OrderNo.: 1808105

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 10 sample(s) on 8/2/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 8/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-3

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:08:00 AM

 Lab ID:
 1808105-001
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	36	19	mg/Kg	5	8/2/2018 10:33:57 AM	A53167
Surr: BFB	110	70-130	%Rec	5	8/2/2018 10:33:57 AM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	74	10	mg/Kg	1	8/2/2018 10:07:27 AM	39550
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/2/2018 10:07:27 AM	39550
Surr: DNOP	96.0	50.6-138	%Rec	1	8/2/2018 10:07:27 AM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.093	mg/Kg	5	8/2/2018 10:33:57 AM	B53167
Toluene	ND	0.19	mg/Kg	5	8/2/2018 10:33:57 AM	B53167
Ethylbenzene	ND	0.19	mg/Kg	5	8/2/2018 10:33:57 AM	B53167
Xylenes, Total	0.40	0.37	mg/Kg	5	8/2/2018 10:33:57 AM	B53167
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	5	8/2/2018 10:33:57 AM	B53167
Surr: Toluene-d8	97.4	70-130	%Rec	5	8/2/2018 10:33:57 AM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 14
	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

Lab Order **1808105**Date Reported: **8/3/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-8

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 9:49:00 AM

 Lab ID:
 1808105-002
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	8/2/2018 10:57:02 AM	A53167
Surr: BFB	109	70-130	%Rec	1	8/2/2018 10:57:02 AM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/2/2018 10:31:52 AM	39550
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/2/2018 10:31:52 AM	39550
Surr: DNOP	97.5	50.6-138	%Rec	1	8/2/2018 10:31:52 AM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.020	mg/Kg	1	8/2/2018 10:57:02 AM	B53167
Toluene	ND	0.039	mg/Kg	1	8/2/2018 10:57:02 AM	B53167
Ethylbenzene	ND	0.039	mg/Kg	1	8/2/2018 10:57:02 AM	B53167
Xylenes, Total	ND	0.079	mg/Kg	1	8/2/2018 10:57:02 AM	B53167
Surr: 4-Bromofluorobenzene	122	70-130	%Rec	1	8/2/2018 10:57:02 AM	B53167
Surr: Toluene-d8	97.0	70-130	%Rec	1	8/2/2018 10:57:02 AM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 14
	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 ReportLab Order **1808105**

Date Reported: 8/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-9

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 9:42:00 AM

 Lab ID:
 1808105-003
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	8/2/2018 11:20:10 AM	A53167
Surr: BFB	109	70-130	%Rec	1	8/2/2018 11:20:10 AM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/2/2018 10:56:23 AM	39550
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/2/2018 10:56:23 AM	39550
Surr: DNOP	98.9	50.6-138	%Rec	1	8/2/2018 10:56:23 AM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.019	mg/Kg	1	8/2/2018 11:20:10 AM	B53167
Toluene	ND	0.037	mg/Kg	1	8/2/2018 11:20:10 AM	B53167
Ethylbenzene	ND	0.037	mg/Kg	1	8/2/2018 11:20:10 AM	B53167
Xylenes, Total	ND	0.074	mg/Kg	1	8/2/2018 11:20:10 AM	B53167
Surr: 4-Bromofluorobenzene	123	70-130	%Rec	1	8/2/2018 11:20:10 AM	B53167
Surr: Toluene-d8	96.9	70-130	%Rec	1	8/2/2018 11:20:10 AM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 14
	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 ReportLab Order **1808105**

Date Reported: 8/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:19:00 AM

 Lab ID:
 1808105-004
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	21	19	mg/Kg	5	8/2/2018 11:43:20 AM	A53167
Surr: BFB	107	70-130	%Rec	5	8/2/2018 11:43:20 AM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	170	9.9	mg/Kg	1	8/2/2018 11:20:46 AM	39550
Motor Oil Range Organics (MRO)	52	50	mg/Kg	1	8/2/2018 11:20:46 AM	39550
Surr: DNOP	105	50.6-138	%Rec	1	8/2/2018 11:20:46 AM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.093	mg/Kg	5	8/2/2018 11:43:20 AM	B53167
Toluene	ND	0.19	mg/Kg	5	8/2/2018 11:43:20 AM	B53167
Ethylbenzene	ND	0.19	mg/Kg	5	8/2/2018 11:43:20 AM	B53167
Xylenes, Total	ND	0.37	mg/Kg	5	8/2/2018 11:43:20 AM	B53167
Surr: 4-Bromofluorobenzene	119	70-130	%Rec	5	8/2/2018 11:43:20 AM	B53167
Surr: Toluene-d8	99.0	70-130	%Rec	5	8/2/2018 11:43:20 AM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 14
	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 ReportLab Order **1808105**

Date Reported: 8/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-18

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:10:00 AM

 Lab ID:
 1808105-005
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	140	19	mg/Kg	5	8/2/2018 12:06:30 PM	A53167
Surr: BFB	105	70-130	%Rec	5	8/2/2018 12:06:30 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	270	9.9	mg/Kg	1	8/2/2018 11:45:17 AM	39550
Motor Oil Range Organics (MRO)	71	49	mg/Kg	1	8/2/2018 11:45:17 AM	39550
Surr: DNOP	102	50.6-138	%Rec	1	8/2/2018 11:45:17 AM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.093	mg/Kg	5	8/2/2018 12:06:30 PM	B53167
Toluene	ND	0.19	mg/Kg	5	8/2/2018 12:06:30 PM	B53167
Ethylbenzene	ND	0.19	mg/Kg	5	8/2/2018 12:06:30 PM	B53167
Xylenes, Total	3.7	0.37	mg/Kg	5	8/2/2018 12:06:30 PM	B53167
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	5	8/2/2018 12:06:30 PM	B53167
Surr: Toluene-d8	100	70-130	%Rec	5	8/2/2018 12:06:30 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 14
	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, Inc.

Date Reported: 8/3/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-19

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:46:00 AM

 Lab ID:
 1808105-006
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	8/2/2018 12:29:39 PM	A53167
Surr: BFB	110	70-130	%Rec	1	8/2/2018 12:29:39 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA			Analyst	: TOM		
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	8/2/2018 12:09:40 PM	39550
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/2/2018 12:09:40 PM	39550
Surr: DNOP	100	50.6-138	%Rec	1	8/2/2018 12:09:40 PM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.018	mg/Kg	1	8/2/2018 12:29:39 PM	B53167
Toluene	ND	0.037	mg/Kg	1	8/2/2018 12:29:39 PM	B53167
Ethylbenzene	ND	0.037	mg/Kg	1	8/2/2018 12:29:39 PM	B53167
Xylenes, Total	ND	0.074	mg/Kg	1	8/2/2018 12:29:39 PM	B53167
Surr: 4-Bromofluorobenzene	124	70-130	%Rec	1	8/2/2018 12:29:39 PM	B53167
Surr: Toluene-d8	96.6	70-130	%Rec	1	8/2/2018 12:29:39 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 14
	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

Lab Order **1808105**Date Reported: **8/3/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-20

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:33:00 AM

 Lab ID:
 1808105-007
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	150	19	mg/Kg	5	8/2/2018 1:05:38 PM	A53167
Surr: BFB	106	70-130	%Rec	5	8/2/2018 1:05:38 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	:: TOM
Diesel Range Organics (DRO)	220	9.8	mg/Kg	1	8/2/2018 12:34:19 PM	39550
Motor Oil Range Organics (MRO)	93	49	mg/Kg	1	8/2/2018 12:34:19 PM	39550
Surr: DNOP	102	50.6-138	%Rec	1	8/2/2018 12:34:19 PM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.095	mg/Kg	5	8/2/2018 1:05:38 PM	B53167
Toluene	0.33	0.19	mg/Kg	5	8/2/2018 1:05:38 PM	B53167
Ethylbenzene	0.21	0.19	mg/Kg	5	8/2/2018 1:05:38 PM	B53167
Xylenes, Total	3.6	0.38	mg/Kg	5	8/2/2018 1:05:38 PM	B53167
Surr: 4-Bromofluorobenzene	119	70-130	%Rec	5	8/2/2018 1:05:38 PM	B53167
Surr: Toluene-d8	100	70-130	%Rec	5	8/2/2018 1:05:38 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 14
	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 **1808105**Date Reported: **8/3/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-21

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:38:00 AM

 Lab ID:
 1808105-008
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	8/2/2018 1:28:51 PM	A53167
Surr: BFB	100	70-130	%Rec	5	8/2/2018 1:28:51 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/2/2018 12:58:47 PM	39550
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/2/2018 12:58:47 PM	39550
Surr: DNOP	97.6	50.6-138	%Rec	1	8/2/2018 12:58:47 PM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST	•				Analyst	: AG
Benzene	ND	0.090	mg/Kg	5	8/2/2018 1:28:51 PM	B53167
Toluene	ND	0.18	mg/Kg	5	8/2/2018 1:28:51 PM	B53167
Ethylbenzene	ND	0.18	mg/Kg	5	8/2/2018 1:28:51 PM	B53167
Xylenes, Total	ND	0.36	mg/Kg	5	8/2/2018 1:28:51 PM	B53167
Surr: 4-Bromofluorobenzene	112	70-130	%Rec	5	8/2/2018 1:28:51 PM	B53167
Surr: Toluene-d8	102	70-130	%Rec	5	8/2/2018 1:28:51 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 14
	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 **1808105**Date Reported: **8/3/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-22

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:55:00 AM

 Lab ID:
 1808105-009
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	t: AG
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	8/2/2018 1:52:05 PM	A53167
Surr: BFB	107	70-130	%Rec	1	8/2/2018 1:52:05 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/2/2018 1:23:31 PM	39550
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/2/2018 1:23:31 PM	39550
Surr: DNOP	100	50.6-138	%Rec	1	8/2/2018 1:23:31 PM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analys	t: AG
Benzene	ND	0.018	mg/Kg	1	8/2/2018 1:52:05 PM	B53167
Toluene	ND	0.037	mg/Kg	1	8/2/2018 1:52:05 PM	B53167
Ethylbenzene	ND	0.037	mg/Kg	1	8/2/2018 1:52:05 PM	B53167
Xylenes, Total	ND	0.074	mg/Kg	1	8/2/2018 1:52:05 PM	B53167
Surr: 4-Bromofluorobenzene	120	70-130	%Rec	1	8/2/2018 1:52:05 PM	B53167
Surr: Toluene-d8	95.8	70-130	%Rec	1	8/2/2018 1:52:05 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 9 of 14
	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 ReportLab Order **1808105**

Date Reported: 8/3/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-23

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 10:25:00 AM

 Lab ID:
 1808105-010
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	t: AG
Gasoline Range Organics (GRO)	ND	3.6	mg/Kg	1	8/2/2018 2:15:20 PM	A53167
Surr: BFB	108	70-130	%Rec	1	8/2/2018 2:15:20 PM	A53167
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analys	t: TOM
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	8/2/2018 1:48:03 PM	39550
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/2/2018 1:48:03 PM	39550
Surr: DNOP	98.3	50.6-138	%Rec	1	8/2/2018 1:48:03 PM	39550
EPA METHOD 8260B: VOLATILES SHORT LIST					Analys	t: AG
Benzene	ND	0.018	mg/Kg	1	8/2/2018 2:15:20 PM	B53167
Toluene	ND	0.036	mg/Kg	1	8/2/2018 2:15:20 PM	B53167
Ethylbenzene	ND	0.036	mg/Kg	1	8/2/2018 2:15:20 PM	B53167
Xylenes, Total	ND	0.071	mg/Kg	1	8/2/2018 2:15:20 PM	B53167
Surr: 4-Bromofluorobenzene	121	70-130	%Rec	1	8/2/2018 2:15:20 PM	B53167
Surr: Toluene-d8	98.3	70-130	%Rec	1	8/2/2018 2:15:20 PM	B53167

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 10 of 14
	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, Inc.

WO#: 1808105

03-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39550

Sample ID LCS-39550 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39550 RunNo: 53150 Prep Date: 8/2/2018 Analysis Date: 8/2/2018 SeqNo: 1748858 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 O 90.8 70 130 Surr: DNOP 4.4 5.000 88.6 50.6 138

SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 39550 RunNo: 53150 Analysis Date: 8/2/2018 Prep Date: 8/2/2018 SeqNo: 1748859 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 ND 50 Motor Oil Range Organics (MRO) Surr: DNOP 9.3 10.00 93.2 50.6 138

Sample ID LCS-39511 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39511 RunNo: 53150 Prep Date: 7/31/2018 Analysis Date: 8/2/2018 SeqNo: 1749788 Units: %Rec Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Surr: DNOP 4.5 5.000 89.1 50.6 138

Sample ID MB-39511 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: PBS Batch ID: 39511 RunNo: 53150 Prep Date: 7/31/2018 Analysis Date: 8/2/2018 SeqNo: 1749790 Units: %Rec Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Surr: DNOP 9.7 10.00 97.0 50.6 138

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 11 of 14

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808105**

03-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 100ng btex lcs	Samp1	SampType: LCS4 TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batcl	h ID: B5	3167	F	RunNo: 53167					
Prep Date:	Analysis D	Date: 8/	2/2018	9	SeqNo: 1749330 Units: mg/Kg			(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.98	0.025	1.000	0	98.1	80	120			
Toluene	1.0	0.050	1.000	0	103	80	120			
Ethylbenzene	1.0	0.050	1.000	0	103	80	120			
Xylenes, Total	3.0	0.10	3.000	0	102	80	120			
Surr: 4-Bromofluorobenzene	0.49		0.5000		98.9	70	130			
Surr: Toluene-d8	0.49		0.5000		99.0	70	130			
Operation ID.	07	F	21.14	T	10 - d E l		00000 1/ 1			

Sample ID rb	Samp ⁻	Гуре: МЕ	BLK	TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batc	h ID: B5	3167	F	RunNo: 53167						
Prep Date:	Analysis Date: 8/2/2018			SeqNo: 1749349			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	0.55		0.5000		111	70	130				
Surr: Toluene-d8	0.52		0.5000		104	70	130				

Sample ID 1808105-002ams	s Samp1	SampType: MS4 TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: SC-8	Batcl	Batch ID: B53167 RunNo: 53167									
Prep Date:	Analysis D	Date: 8/	2/2018	5	SeqNo: 1	749917	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.73	0.020	0.7886	0.01064	90.9	80	120				
Toluene	0.76	0.039	0.7886	0.007247	95.6	80	120				
Ethylbenzene	0.78	0.039	0.7886	0.01228	97.8	82	121				
Xylenes, Total	2.5	0.079	2.366	0.05470	103	80.2	120				
Surr: 4-Bromofluorobenzene	0.42		0.3943		107	70	130				
Surr: Toluene-d8	0.38		0.3943		95.7	70	130				

Sample ID 1808105-002amsc	J SampT	ype: M \$	SD4	Tes	tCode: El	8260B: Volatiles Short List					
Client ID: SC-8	Batch	n ID: B5	3167	R	RunNo: 53167						
Prep Date:	Analysis D	ate: 8/	2/2018	S	SeqNo: 1	749918	Units: mg/K	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.73	0.020	0.7886	0.01064	90.6	80	120	0.305	20		
Toluene	0.75	0.039	0.7886	0.007247	93.7	80	120	2.01	20		
Ethylbenzene	0.79	0.039	0.7886	0.01228	98.0	82	121	0.225	20		
Xylenes, Total	2.4	0.079	2.366	0.05470	101	80.2	120	1.87	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 Detection Limit
- W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1808105

03-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1808105-002amsd SampType: MSD4 TestCode: EPA Method 8260B: Volatiles Short List

Client ID: SC-8 Batch ID: **B53167** RunNo: 53167

Prep Date:	Analysis Date: 8/2/2018			SeqNo: 1749918			Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.44		0.3943		110	70	130	0	0	
Surr: Toluene-d8	0.38		0.3943		95.5	70	130	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

Reporting Detection Limit RL

Sample container temperature is out of limit as specified

Page 13 of 14

Hall Environmental Analysis Laboratory, Inc.

SampType: MBLK

500

WO#: 1808105

03-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID rb

Surr: BFB

Sample ID 2.5ug gro Ics SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: LCSS Batch ID: A53167 RunNo: 53167 Prep Date: Analysis Date: 8/2/2018 SeqNo: 1749301 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) O 27 5.0 25.00 109 70 130 470 93.6 Surr: BFB 500.0 70 130

Client ID: PBS Batch ID: A53167 RunNo: 53167 Analysis Date: 8/2/2018 Prep Date: SeqNo: 1749302 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) ND 5.0

99 1

500.0

TestCode: EPA Method 8015D Mod: Gasoline Range

130

130

70

Sample ID 1808105-001ams SampType: MS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-3 Batch ID: A53167 RunNo: 53167 Prep Date: Analysis Date: 8/2/2018 SeqNo: 1749913 Units: mg/Kg **PQL** SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result HighLimit Qual Gasoline Range Organics (GRO) 140 19 92.59 36.44 107 64.7 142 Surr: BFB 1900 1852 102 70

Sample ID 1808105-001amsd SampType: MSD TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-3 Batch ID: A53167 RunNo: 53167 Analysis Date: 8/2/2018 Prep Date: SeqNo: 1749914 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 120 19 92.59 36.44 94.1 64.7 142 9.26 20 Surr: BFB 1900 1852 105 70 130 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 14 of 14

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified



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 ENG	INEERING LL	Work Order	Number:	1808105			RcptN	o: 1
Received By:	Anne Tho	rne	8/2/2018 8:37	:00 AM		Am. Am.	A.		
Completed By: Reviewed By: Labeled	ENM	me -08/02/18	8/2/2018 8:40 8/2/18 C <i>095</i> 8	:21 AM		Anni	Am	~	
Chain of Cu	stody								
1. Is Chain of	Custody compl	lete?			Yes 🗹	. No		Not Present	
2. How was the	e sample delive	ered?			<u>Courier</u>				
<u>Log In</u>									
3. Was an atte	empt made to c	ool the samples?			Yes 🗹	No		na 🗆	
4. Were all san	nples received	at a temperature	of >0° C to 6.0°	С	Yes 🗸	No		na 🗆	
5. Sample(s) in	n proper contai	ner(s)?			Yes 🗹	No			
6. Sufficient sa	mple volume fo	or indicated test(s))?	,	Yes 🗹	No			
7. Are samples	(except VOA a	and ONG) properly	y preserved?		Yes 🗹	No			
8. Was preserv	ative added to	bottles?		,	Yes 🗌	No	✓	NA 🗆	
9. VOA vials ha	ave zero heads	pace?		,	Yes 🗌	No		No VOA Vials 🗹	
10. Were any sa	ample containe	rs received broke	n?		Yes	No	V	# 25	
11. Does paperv					Yes 🗹	No		# of preserved bottles checked for pH:	or >12 unless noted)
	pancies on cha	tified on Chain of (Custody?	,	Yes 🗸	No	\Box	Adjusted?	or 12 unicas notae)
13. Is it clear wh			Justouy:		Yes 🗹	No		-	
14. Were all hold		to be met?			Yes 🗹	No	_	Checked by:	
Special Hand	lling (if app	licable)							
		screpancies with t	his order?		Yes 🗌	No		NA 🗸	
Perso	n Notified:			Date			CHEST CONTRACTOR	·-··	
By Wh	nom:		TATAL BELLEVILLE CONTROL OF THE PROPERTY OF TH	Via:	eMail	Phone	Fax	In Person	
Regar	ding:						<u> </u>	ornarowonocomonicario de productiva de la comonicación de la como de la comonicación de l	
Client	Instructions:								
16. Additional re	emarks:							-	
17. Cooler Info	ormation .								
Cooler N		Condition Se	al Intact Seal	No Se	al Date	Signed I	Зу		
1	1.1	Good Yes							
[2	1.1	Good Yes							

Turn-Aroun C. Standa Project Name Project Ma Sampler: On Ice Type and ACOM	-of-Custody Record Turn-Around Time: Content Anne: Cother Sample Request 1D Project Name: Cother Sample Request 1D Project
Tun-Around Time: Castandard Project Name: Project Manager: Sampler: Sampler: Sampler: Container Temperature2. 1—CE-10=11 Type and # Type Type and # Type Type HEALNa Type Container Temperature2. 1—CE-10=11 Type Type Type HEALNa Type Type Type Type Type T	Standard Turn-Around Time Standard Troject Name: Project Name: Pro
Turn-Around Time I Standard Project Name: Houth Sampler: Sampler: Sampler: Content # Mouth & Mo	Off-Custody Record Turn-Around Time Sandard Project Name: Turn-Around Time Sandard Project Name: Turn-Around Time Standard Project Name: Turn-Around Time Standard Project Name: Turn-Around Time Standard Project Name: Sampler Sampler Pres Surface X Sample Request ID Type and # Type
	of-Custody Record Strength Control □ Level 4 (Full Validation) □ Other Sample Request ID Suit S
	Nation



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

August 07, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: Lucerne 1 OrderNo.: 1808125

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/2/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109



Analytical ReportLab Order **1808125**

Date Reported: 8/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-11

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 9:36:00 AM

 Lab ID:
 1808125-001
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	19	4.9		mg/Kg	1	8/3/2018 3:37:44 PM	39567
Surr: BFB	125	70-130		%Rec	1	8/3/2018 3:37:44 PM	39567
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	130	10		mg/Kg	1	8/3/2018 4:35:38 PM	39571
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2018 4:35:38 PM	39571
Surr: DNOP	86.1	50.6-138		%Rec	1	8/3/2018 4:35:38 PM	39571
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	ND	0.024		mg/Kg	1	8/3/2018 3:37:44 PM	39567
Toluene	ND	0.049		mg/Kg	1	8/3/2018 3:37:44 PM	39567
Ethylbenzene	ND	0.049		mg/Kg	1	8/3/2018 3:37:44 PM	39567
Xylenes, Total	ND	0.097		mg/Kg	1	8/3/2018 3:37:44 PM	39567
Surr: 4-Bromofluorobenzene	132	70-130	S	%Rec	1	8/3/2018 3:37:44 PM	39567
Surr: Toluene-d8	99.9	70-130		%Rec	1	8/3/2018 3:37:44 PM	39567

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank				
	D	Sample Diluted Due to Matrix	E	Value above quantitation range				
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 7				
	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				

Lab Order **1808125**

Date Reported: 8/7/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-12

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 9:31:00 AM

 Lab ID:
 1808125-002
 Matrix:
 SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	4.9	mg/Kg	1	8/3/2018 5:10:54 PM	39567
Surr: BFB	113	70-130	%Rec	1	8/3/2018 5:10:54 PM	39567
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	:: Irm
Diesel Range Organics (DRO)	16	9.8	mg/Kg	1	8/3/2018 4:57:43 PM	39571
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/3/2018 4:57:43 PM	39571
Surr: DNOP	88.7	50.6-138	%Rec	1	8/3/2018 4:57:43 PM	39571
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.025	mg/Kg	1	8/3/2018 5:10:54 PM	39567
Toluene	ND	0.049	mg/Kg	1	8/3/2018 5:10:54 PM	39567
Ethylbenzene	ND	0.049	mg/Kg	1	8/3/2018 5:10:54 PM	39567
Xylenes, Total	ND	0.098	mg/Kg	1	8/3/2018 5:10:54 PM	39567
Surr: 4-Bromofluorobenzene	127	70-130	%Rec	1	8/3/2018 5:10:54 PM	39567
Surr: Toluene-d8	96.8	70-130	%Rec	1	8/3/2018 5:10:54 PM	39567

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 7
	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

Lab Order **1808125**Date Reported: **8/7/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-13

 Project:
 Lucerne 1
 Collection Date: 8/1/2018 9:25:00 AM

 Lab ID:
 1808125-003
 Matrix: SOIL
 Received Date: 8/2/2018 8:37:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/3/2018 5:57:29 PM	39567
Surr: BFB	117	70-130		%Rec	1	8/3/2018 5:57:29 PM	39567
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	10	10		mg/Kg	1	8/3/2018 5:19:49 PM	39571
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/3/2018 5:19:49 PM	39571
Surr: DNOP	88.3	50.6-138		%Rec	1	8/3/2018 5:19:49 PM	39571
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	ND	0.024		mg/Kg	1	8/3/2018 5:57:29 PM	39567
Toluene	ND	0.047		mg/Kg	1	8/3/2018 5:57:29 PM	39567
Ethylbenzene	ND	0.047		mg/Kg	1	8/3/2018 5:57:29 PM	39567
Xylenes, Total	ND	0.095		mg/Kg	1	8/3/2018 5:57:29 PM	39567
Surr: 4-Bromofluorobenzene	131	70-130	S	%Rec	1	8/3/2018 5:57:29 PM	39567
Surr: Toluene-d8	96.0	70-130		%Rec	1	8/3/2018 5:57:29 PM	39567

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7
	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, Inc.

WO#: 1808125

07-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39571 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 39571 RunNo: 53193 Prep Date: 8/2/2018 Analysis Date: 8/3/2018 SeqNo: 1750580 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 8.6 10.00 86.3 50.6 138

Sample ID LCS-39571 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39571 RunNo: 53193 Analysis Date: 8/3/2018 Prep Date: 8/2/2018 SeqNo: 1750710 Units: mg/Kg Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 10 0 70 51 50.00 102 130 Surr: DNOP 4.2 5.000 83.7 50.6 138

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 4 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808125**

07-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1808125-001ams	SampT	ype: MS	64	Tes	8260B: Vola	tiles Short	List				
Client ID: SC-11	Batch	n ID: 39	567	F	RunNo: 5	3199					
Prep Date: 8/2/2018	Analysis D	ate: 8/	3/2018	S	SeqNo: 1	751100	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.96	0.024	0.9775	0	97.7	80	120				
Toluene	1.0	0.049	0.9775	0.007549	103	80	120				
Ethylbenzene	1.1	0.049	0.9775	0.01099	110	82	121				
Xylenes, Total	3.5	0.098	2.933	0.07489	115	80.2	120				
Surr: 4-Bromofluorobenzene	0.56		0.4888		114	70	130				
Surr: Toluene-d8	0.47		0.4888		95.5	70	130				

Sample ID 1808125-001ams	d Samp⊺	SampType: MSD4 TestCode: EPA Method 8260B: Volatiles Short List									
Client ID: SC-11	Batcl	n ID: 39	567	R	RunNo: 53199						
Prep Date: 8/2/2018	Analysis D	Date: 8/	3/2018	S	SeqNo: 1	751101	Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.95	0.024	0.9625	0	98.7	80	120	0.502	20		
Toluene	1.0	0.048	0.9625	0.007549	103	80	120	2.22	20		
Ethylbenzene	1.0	0.048	0.9625	0.01099	107	82	121	4.72	20		
Xylenes, Total	3.3	0.096	2.887	0.07489	111	80.2	120	5.18	20		
Surr: 4-Bromofluorobenzene	0.59		0.4812		123	70	130	0	0		
Surr: Toluene-d8	0.45		0.4812		93.5	70	130	0	0		

Sampi	ype: LC	54	TestCode: EPA Method 8260B: Volatiles Short List								
Batch	n ID: 39	567	R	RunNo: 5							
Analysis D	ate: 8/	3/2018	S	SeqNo: 1	751160	Units: mg/Kg					
Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
0.93	0.025	1.000	0	92.9	80	120					
0.94	0.050	1.000	0	94.2	80	120					
0.94	0.050	1.000	0	94.1	80	120					
3.0	0.10	3.000	0	101	80	120					
0.53		0.5000		107	70	130					
0.48		0.5000		95.4	70	130					
	Batch Analysis D Result 0.93 0.94 0.94 3.0 0.53	Batch ID: 399 Analysis Date: 8/ Result PQL 0.93 0.025 0.94 0.050 0.94 0.050 3.0 0.10 0.53	0.93 0.025 1.000 0.94 0.050 1.000 0.94 0.050 1.000 3.0 0.10 3.000 0.53 0.5000	Batch ID: 39567 FA Analysis Date: 8/3/2018 SPK value Result PQL SPK value SPK Ref Val 0.93 0.025 1.000 0 0.94 0.050 1.000 0 0.94 0.050 1.000 0 0.94 0.050 3.000 0 0.53 0.5000	Batch ID: 39567 RunNo: 5 Analysis Date: 8/3/2018 SeqNo: 1 Result PQL SPK value SPK Ref Val %REC 0.93 0.025 1.000 0 92.9 0.94 0.050 1.000 0 94.2 0.94 0.050 1.000 0 94.1 3.0 0.10 3.000 0 101 0.53 0.5000 0.5000 107	Batch ID: 39567 RunNo: 53199 Analysis Date: 8/3/2018 SeqNo: 1751160 Result PQL SPK value SPK Ref Val %REC LowLimit 0.93 0.025 1.000 0 92.9 80 0.94 0.050 1.000 0 94.2 80 0.94 0.050 1.000 0 94.1 80 3.0 0.10 3.000 0 101 80 0.53 0.5000 0 107 70	Batch ID: 39567 RunNo: 53199 Analysis Date: 8/3/2018 SeqNo: 1751160 Units: mg/k Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit 0.93 0.025 1.000 0 92.9 80 120 0.94 0.050 1.000 0 94.2 80 120 0.94 0.050 1.000 0 94.1 80 120 3.0 0.10 3.000 0 101 80 120 0.53 0.5000 107 70 130	Batch ID: 39567 RunNo: 53199 Analysis Date: 8/3/2018 SeqNo: 1751160 Units: mg/ky Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD 0.93 0.025 1.000 0 92.9 80 120 0.94 0.050 1.000 0 94.2 80 120 0.94 0.050 1.000 0 94.1 80 120 3.0 0.10 3.000 0 101 80 120 0.53 0.5000 107 70 130 100	Batch ID: 39567 RunNo: 53199 Analysis Date: 8/3/2018 SeqNo: 1751160 Units: mg/Kg Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit 0.93 0.025 1.000 0 92.9 80 120 0.94 0.050 1.000 0 94.1 80 120 0.94 0.050 1.000 0 94.1 80 120 3.0 0.10 3.000 0 101 80 120 0.53 0.5000 101 80 120 7 130 100 101 70 130		

Sample ID mb-39567	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batch	ID: 39	567	R	RunNo: 5	3199				
Prep Date: 8/2/2018	Analysis D	ate: 8/	3/2018	S	SeqNo: 1	751161	Units: mg/K	(g		
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								

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

Reporting Detection Limit

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

0.50

WO#: **1808125**

07-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Surr: Toluene-d8

Sample ID mb-39567 SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List

Client ID: PBS Batch ID: 39567 RunNo: 53199

Prep Date: **8/2/2018** Analysis Date: **8/3/2018** SeqNo: **1751161** Units: **mg/Kg**

0.5000

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual Surr: 4-Bromofluorobenzene 0.64 0.5000 128 70 130

99.1

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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808125**

07-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID Ics-39567 SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Batch ID: 39567 RunNo: 53199

Prep Date: 8/2/2018 Analysis Date: 8/3/2018 SeqNo: 1751079 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 98.6 70 130

 Gasoline Range Organics (GRO)
 25
 5.0
 25.00
 0
 98.6
 70
 130

 Surr: BFB
 510
 500.0
 102
 70
 130

Sample ID mb-39567 SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS Batch ID: 39567 RunNo: 53199

Prep Date: **8/2/2018** Analysis Date: **8/3/2018** SeqNo: **1751080** 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 570 500.0 114 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 7 of 7



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 W	ork Order Number: 1808125		RcptNo: 1
Received By: Anne Thorne 8/2/2	2018 8:37:00 AM	anne Sham	
Completed By: Anne Thome 8/2/2	2018 10:33:46 AM	Anne Stran	
Reviewed By: Anne Thome SA S 08 02 14			
Labeled by! AT 08/02/18			
Chain of Custody			
1. Is Chain of Custody complete?	Yes 🗸	No 🗆	Not Present
2. How was the sample delivered?	<u>Courier</u>		
<u>Log In</u>			
3. Was an attempt made to cool the samples?	Yes 🗸	No 🗆	NA \square
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 prese	erved? Yes 🗹	No 🗆	
8. Was preservative added to bottles?	Yes	No 🗹	NA \square
9. VOA vials have zero headspace?	Yes 🗌	No 🗆 No	VOA Vials 🗹
10. Were any sample containers received broken?	Yes	No 🗹	
			of preserved ttles checked
11. Does paperwork match bottle labels?	Yes 🗹	No 🗌 for	pH: (<2 or >12 unless noted)
(Note discrepancies on chain of custody) 12. Are matrices correctly identified on Chain of Custod	ly? Yes ⊻	No 🗆	Adjusted?
13. is it clear what analyses were requested?	y: Tes ☑ Yes ☑	No 🗆	
14. Were all holding times able to be met?	Yes 🗹	No 🗆	Checked by:
(If no, notify customer for authorization.)			
Special Handling (if applicable)			
15, Was client notified of all discrepancies with this ord	er? Yes	No 🗌	NA 🗹
Person Notified:	Date	an termin menulativa promoti	
By Whom:	Via: ☐ eMail ☐ P	hone 🗌 Fax 📋	In Person
Regarding:		1	
Client Instructions:			acusto a consequence de consequence
16. Additional remarks:			
17. Cooler Information			
Cooler No Temp C Condition Seal Inta	ct Seal No Seal Date	Signed By	
1 1.1 Good Yes	**************************************		
2 1.1 Good Yes			

	ANALYSIS LABORATORY		60)						(N)	0 人)	Air Bubbles															alytical report
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

August 13, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: Lucerne 1 OrderNo.: 1808513

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 8/9/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report Lab Order 1808513

Date Reported: 8/13/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-11

Project: Lucerne 1 **Collection Date:** 8/8/2018 11:37:00 AM Lab ID: 1808513-001 Matrix: SOIL Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	110	36	mg/Kg	10	8/9/2018 10:55:34 AM	A53327
Surr: BFB	112	70-130	%Rec	10	8/9/2018 10:55:34 AM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	130	9.9	mg/Kg	1	8/9/2018 9:49:21 AM	39684
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/9/2018 9:49:21 AM	39684
Surr: DNOP	94.1	50.6-138	%Rec	1	8/9/2018 9:49:21 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.18	mg/Kg	10	8/9/2018 10:55:34 AM	B53327
Toluene	0.57	0.36	mg/Kg	10	8/9/2018 10:55:34 AM	B53327
Ethylbenzene	ND	0.36	mg/Kg	10	8/9/2018 10:55:34 AM	B53327
Xylenes, Total	3.7	0.72	mg/Kg	10	8/9/2018 10:55:34 AM	B53327
Surr: 4-Bromofluorobenzene	124	70-130	%Rec	10	8/9/2018 10:55:34 AM	B53327
Surr: Toluene-d8	99.4	70-130	%Rec	10	8/9/2018 10:55:34 AM	B53327

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

Qualifiers: Value exceeds Maximum Contaminant Level. Analyte detected in the associated Method Blank D Sample Diluted Due to Matrix Е Value above quantitation range Н 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

Reporting Detection Limit PQL Practical Quanitative Limit RL Sample container temperature is out of limit as specified % Recovery outside of range due to dilution or matrix

Analytical Report Lab Order 1808513

Date Reported: 8/13/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17

 Project:
 Lucerne 1
 Collection Date: 8/8/2018 11:24:00 AM

 Lab ID:
 1808513-002
 Matrix: SOIL
 Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	30	20		mg/Kg	5	8/9/2018 11:18:43 AM	A53327
Surr: BFB	115	70-130		%Rec	5	8/9/2018 11:18:43 AM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGAI	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	76	9.8		mg/Kg	1	8/9/2018 10:11:35 AM	39684
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/9/2018 10:11:35 AM	39684
Surr: DNOP	95.9	50.6-138		%Rec	1	8/9/2018 10:11:35 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	ND	0.098		mg/Kg	5	8/9/2018 11:18:43 AM	B53327
Toluene	ND	0.20		mg/Kg	5	8/9/2018 11:18:43 AM	B53327
Ethylbenzene	ND	0.20		mg/Kg	5	8/9/2018 11:18:43 AM	B53327
Xylenes, Total	ND	0.39		mg/Kg	5	8/9/2018 11:18:43 AM	B53327
Surr: 4-Bromofluorobenzene	128	70-130		%Rec	5	8/9/2018 11:18:43 AM	B53327
Surr: Toluene-d8	98.7	70-130		%Rec	5	8/9/2018 11:18:43 AM	B53327

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 Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report

Lab Order **1808513**Date Reported: **8/13/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-18

 Project:
 Lucerne 1
 Collection Date: 8/8/2018 11:30:00 AM

 Lab ID:
 1808513-003
 Matrix: SOIL
 Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.4	mg/Kg	1	8/9/2018 11:41:48 AM	A53327
Surr: BFB	112	70-130	%Rec	1	8/9/2018 11:41:48 AM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	8/9/2018 10:33:38 AM	39684
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/9/2018 10:33:38 AM	39684
Surr: DNOP	92.0	50.6-138	%Rec	1	8/9/2018 10:33:38 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.017	mg/Kg	1	8/9/2018 11:41:48 AM	B53327
Toluene	ND	0.034	mg/Kg	1	8/9/2018 11:41:48 AM	B53327
Ethylbenzene	0.051	0.034	mg/Kg	1	8/9/2018 11:41:48 AM	B53327
Xylenes, Total	0.25	0.068	mg/Kg	1	8/9/2018 11:41:48 AM	B53327
Surr: 4-Bromofluorobenzene	125	70-130	%Rec	1	8/9/2018 11:41:48 AM	B53327
Surr: Toluene-d8	95.1	70-130	%Rec	1	8/9/2018 11:41:48 AM	B53327

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 Detection Limit
- W Sample container temperature is out of limit as specified

Analytical Report

Lab Order **1808513**Date Reported: **8/13/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-20

 Project:
 Lucerne 1
 Collection Date: 8/8/2018 11:02:00 AM

 Lab ID:
 1808513-004
 Matrix: SOIL
 Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/9/2018 12:04:58 PM	A53327
Surr: BFB	116	70-130		%Rec	1	8/9/2018 12:04:58 PM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	8/9/2018 10:55:47 AM	39684
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/9/2018 10:55:47 AM	39684
Surr: DNOP	92.9	50.6-138		%Rec	1	8/9/2018 10:55:47 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	0.021	0.019		mg/Kg	1	8/9/2018 12:04:58 PM	B53327
Toluene	ND	0.038		mg/Kg	1	8/9/2018 12:04:58 PM	B53327
Ethylbenzene	ND	0.038		mg/Kg	1	8/9/2018 12:04:58 PM	B53327
Xylenes, Total	ND	0.075		mg/Kg	1	8/9/2018 12:04:58 PM	B53327
Surr: 4-Bromofluorobenzene	131	70-130	S	%Rec	1	8/9/2018 12:04:58 PM	B53327
Surr: Toluene-d8	98.3	70-130		%Rec	1	8/9/2018 12:04:58 PM	B53327

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

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 Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report Lab Order 1808513

Date Reported: 8/13/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-25

 Project:
 Lucerne 1
 Collection Date: 8/8/2018 12:10:00 PM

 Lab ID:
 1808513-005
 Matrix: SOIL
 Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	60	18	mg/Kg	5	8/9/2018 12:28:03 PM	A53327
Surr: BFB	116	70-130	%Rec	5	8/9/2018 12:28:03 PM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	59	9.9	mg/Kg	1	8/9/2018 11:17:49 AM	39684
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/9/2018 11:17:49 AM	39684
Surr: DNOP	99.7	50.6-138	%Rec	1	8/9/2018 11:17:49 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.092	mg/Kg	5	8/9/2018 12:28:03 PM	B53327
Toluene	ND	0.18	mg/Kg	5	8/9/2018 12:28:03 PM	B53327
Ethylbenzene	ND	0.18	mg/Kg	5	8/9/2018 12:28:03 PM	B53327
Xylenes, Total	0.46	0.37	mg/Kg	5	8/9/2018 12:28:03 PM	B53327
Surr: 4-Bromofluorobenzene	129	70-130	%Rec	5	8/9/2018 12:28:03 PM	B53327
Surr: Toluene-d8	96.8	70-130	%Rec	5	8/9/2018 12:28:03 PM	B53327

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

Qualifiers: * Value ex

* 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 Detection Limit

W Sample container temperature is out of limit as specified

Analytical Report

Lab Order **1808513**Date Reported: **8/13/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-24

 Project:
 Lucerne 1
 Collection Date: 8/8/2018 11:15:00 AM

 Lab ID:
 1808513-006
 Matrix: SOIL
 Received Date: 8/9/2018 6:50:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analys	: AG
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	8/9/2018 12:51:13 PM	A53327
Surr: BFB	104	70-130	%Rec	5	8/9/2018 12:51:13 PM	A53327
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS				Analyst	:: Irm
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	8/9/2018 11:40:01 AM	39684
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/9/2018 11:40:01 AM	39684
Surr: DNOP	95.9	50.6-138	%Rec	1	8/9/2018 11:40:01 AM	39684
EPA METHOD 8260B: VOLATILES SHORT LIST	Γ				Analyst	: AG
Benzene	ND	0.090	mg/Kg	5	8/9/2018 12:51:13 PM	B53327
Toluene	ND	0.18	mg/Kg	5	8/9/2018 12:51:13 PM	B53327
Ethylbenzene	ND	0.18	mg/Kg	5	8/9/2018 12:51:13 PM	B53327
Xylenes, Total	ND	0.36	mg/Kg	5	8/9/2018 12:51:13 PM	B53327
Surr: 4-Bromofluorobenzene	116	70-130	%Rec	5	8/9/2018 12:51:13 PM	B53327
Surr: Toluene-d8	97.8	70-130	%Rec	5	8/9/2018 12:51:13 PM	B53327

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
- 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
- $\begin{array}{cc} & Page\ 7\ of\ 13 \\ W & Sample \ container\ temperature\ is\ out\ of\ limit\ as\ specified \end{array}$

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808513**

13-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39684 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 39684 RunNo: 53283 Analysis Date: 8/9/2018 Prep Date: 8/9/2018 SeqNo: 1755103 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 8.4 10.00 84.2 50.6 138

Sample ID LCS-39684 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39684 RunNo: 53283 Analysis Date: 8/9/2018 Prep Date: 8/9/2018 SeqNo: 1755104 Units: mg/Kg Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

 Diesel Range Organics (DRO)
 47
 10
 50.00
 0
 94.0
 70
 130

 Surr: DNOP
 4.3
 5.000
 85.6
 50.6
 138

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 Detection Limit
- W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808513**

13-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 100ng lcs	Samp ⁻	Гуре: LC	S4	TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batc	h ID: B5	3327	R	RunNo: 53327							
Prep Date:	Analysis [Date: 8/	9/2018	S	SeqNo: 1	755662	Units: mg/k	ζg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Methyl tert-butyl ether (MTBE)	0.92	0.050	1.000	0	91.6	80	120					
Benzene	0.96	0.025	1.000	0	96.0	80	120					
Toluene	0.99	0.050	1.000	0	99.3	80	120					
Ethylbenzene	0.99	0.050	1.000	0	99.2	80	120					
Xylenes, Total	2.9	0.10	3.000	0	98.3	80	120					
Surr: 4-Bromofluorobenzene	0.54		0.5000		107	70	130					
Surr: Toluene-d8	0.50		0.5000		99.3	70	130					
Sample ID RB	Samp	Гуре: МЕ	BLK	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List			
Client ID: PBS	Batc	h ID: B5	3327	R	RunNo: 5	3327						
Prep Date:	Analysis [Date: 8/	9/2018	S	SeqNo: 1	755674	Units: mg/k	(g				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual		
Methyl tert-butyl ether (MTBE)	ND	0.050										
Benzene	ND	0.025										
Toluene	ND	0.050										
Ethylbenzene	ND	0.050										
Xylenes, Total	ND	0.10										
rigionios, rotai												
Surr: 4-Bromofluorobenzene	0.59		0.5000		117	70	130					

Sample ID 1808513-002ams	SampT	уре: М S	3 4	Test	tCode: El	PA Method	8260B: Volat	tiles Short	List	
Client ID: SC-17	Batcl	h ID: B5	3327	R	RunNo: 5 3	3327				
Prep Date:	Analysis D	ate: 8/	9/2018	S	SeqNo: 17	756108	Units: mg/K	ξg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	3.7	0.20	3.934	0	94.4	80	120			
Benzene	3.7	0.098	3.934	0	93.0	80	120			
Toluene	3.8	0.20	3.934	0.03289	96.2	80	120			
Ethylbenzene	4.1	0.20	3.934	0.04520	102	82	121			
Xylenes, Total	12	0.39	11.80	0.3783	100	80.2	120			
Surr: 4-Bromofluorobenzene	2.3		1.967		116	70	130			
Surr: Toluene-d8	2.0		1.967		101	70	130			

Sample ID 1808513-002amse	d SampTyp	e: MS	SD4	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: SC-17	Batch ID): B5	3327	F	RunNo: 5	53327				
Prep Date:	Analysis Date	e: 8/	9/2018	8	SeqNo: 1	756109	Units: mg/k	(g		
Analyte	Result F	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	3.7	0.20	3.934	0	93.7	80	120	0.763	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 Detection Limit
- W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

WO#: 1808513

13-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1808513-002amsd SampType: MSD4 TestCode: EPA Method 8260B: Volatiles Short List Client ID: SC-17 Batch ID: **B53327** RunNo: 53327 Analysis Date: 8/9/2018 SeqNo: 1756109 Prep Date: Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 3.6 0.098 3.934 0 91.8 80 1.29 20 120 Toluene 3.7 3.934 0.03289 93.3 80 20 0.20 120 3.05 95.6 Ethylbenzene 0.20 3.934 0.04520 82 20 3.8 121 6.56 Xylenes, Total 12 0.39 11.80 0.3783 97.4 80.2 120 2.96 20 Surr: 4-Bromofluorobenzene 2.2 1.967 112 70 130 0 0 Surr: Toluene-d8 2.0 1.967 99.2 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 Detection Limit
- W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

WO#: **1808513**

13-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 2.5ug gro Ics SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Batch ID: A53327 RunNo: 53327

Prep Date: Analysis Date: 8/9/2018 SeqNo: 1755649 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 0 105 70 130

 Gasoline Range Organics (GRO)
 26
 5.0
 25.00
 0
 105
 70
 130

 Surr: BFB
 490
 500.0
 97.6
 70
 130

Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS Batch ID: A53327 RunNo: 53327

Prep Date: Analysis Date: 8/9/2018 SeqNo: 1755650 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 520 500.0 105 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 Detection Limit
- W Sample container temperature is out of limit as specified

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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: 1808513 RcptNo: 1 am Sham Received By: **Anne Thome** 8/9/2018 6:50:00 AM anne Arm 8/9/2018 6:56:08 AM Completed By: Anne Thorne $\sigma_{\mathcal{I}}$ 8/9/18 Reviewed By: Cabiled by: A 08/09/18 Chain of Custody Not Present 1. Is Chain of Custody complete? Yes 🔽 No 🗆 2. How was the sample delivered? Courier Log In No 🗆 NA 🗆 Yes 🗸 3. Was an attempt made to cool the samples? No 🗌 NA 4. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 Yes 🗸 No 🗌 Sample(s) in proper container(s)? No 🗆 Yes 🗹 6. Sufficient sample volume for indicated test(s)? No 🗌 V 7. Are samples (except VOA and ONG) properly preserved? NA 🔲 No 🗹 8. Was preservative added to bottles? Yes No VOA Vials 🗹 Yes 🗌 No 🗌 9. VOA vials have zero headspace? Yes 🗌 No 🗹 10. Were any sample containers received broken? # of preserved bottles checked Yes 🔽 No 🗌 for pH: 11. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No . 12. Are matrices correctly identified on Chain of Custody? Yes 🗹 No 🗌 13. Is it clear what analyses were requested? Checked by: 14. Were all holding times able to be met? Yes 🗹 No 🗀 (If no, notify customer for authorization.) Special Handling (if applicable) Yes No 🗌 NA 🗸 15. Was client notified of all discrepancies with this order? Person Notified: Date eMail Phone Fax In Person By Whom: Via: Regarding: Client Instructions: Additional remarks: 17. Cooler Information Cooler No Temp C Condition Seal Intact | Seal No Seal Date 1.0 Good Yes

	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	505-345-3975 Fax 505-345-4107	Analysis Request	(†C	(SM	IS :	(1.81 (1.40 0728 000,eC	4 b or or or or or or ov ov	TPH (Metho EDB (Metho PAH's (8310 RCRA 8 Me Anions (F,Cl 8260B (VOA 8270 (Semi-											Juch () / () / ()		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.
	*		4901	Tel. 5							ITM + X3T8 82108 H9T	ナ					-		 		Remarks:	1-		oility. Any
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Turn-Around Time:	□ Standard	Project Name:	Lowerne	Project #:		Project Manager:			Sampler: U	Ten	Acontainer F Type and #	Yer Calass	+				7		i'		Received by:	Dominod	receive Jy.	ontracted to other acci
Chain-of-Custody Record	Lute Engineering, LLC	•	501 Alroport Dr. Swife	1M 84401	9486	Walder B Auteralnearing. Com	(acitabila/ Lioya I E	Level 4 (rull validation)			Sample Request ID	56-11	56-17	81-75	92-75	XXXX	h7-75				id by:	4ndi Now	No.	nitted to Hall Environmental may be subc
of-Cu	THE MAN	7	t I	V Valor	79.3	Jed love			□ Other		Matrix	Soil	}				1				Refinduished by:		$\mathcal{M}_{\mathcal{M}}$	samples subr
Chain-	Client: $Q_{\sim \setminus \ell}$		Mailing Address:	205 FAMMINGTON NIN	Phone #: 505	email or Fax#:	QA/QC Package:	Stationalu	Accreditation □ NELAP	□ EDD (Type)	Date Time	6/8/14 1737	HZ11	0211	7011	0121	SIII			Pag	Date: 0	04 E 14.00	2/8/L 11846	If necessary,



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

August 14, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: HEC Lucerne 1 OrderNo.: 1808720

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 7 sample(s) on 8/11/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Lab Order **1808720**

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC **Client Sample ID:** SC-3 (R)

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 2:27:00 PM

 Lab ID:
 1808720-001
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst:	AG
Gasoline Range Organics (GRO)	ND	17	mg/Kg	5	8/13/2018 11:03:12 AM	A53389
Surr: BFB	104	70-130	%Rec	5	8/13/2018 11:03:12 AM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst:	Irm
Diesel Range Organics (DRO)	ND	9.5	mg/Kg	1	8/13/2018 11:20:40 AM	39736
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/13/2018 11:20:40 AM	39736
Surr: DNOP	91.6	50.6-138	%Rec	1	8/13/2018 11:20:40 AM	39736
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst:	AG
Benzene	ND	0.085	mg/Kg	5	8/13/2018 11:03:12 AM	C53389
Toluene	ND	0.17	mg/Kg	5	8/13/2018 11:03:12 AM	C53389
Ethylbenzene	ND	0.17	mg/Kg	5	8/13/2018 11:03:12 AM	C53389
Xylenes, Total	ND	0.34	mg/Kg	5	8/13/2018 11:03:12 AM	C53389
Surr: 4-Bromofluorobenzene	118	70-130	%Rec	5	8/13/2018 11:03:12 AM	C53389
Surr: Toluene-d8	97.5	70-130	%Rec	5	8/13/2018 11:03:12 AM	C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank				
	D	Sample Diluted Due to Matrix	E	Value above quantitation range				
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 11				
	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				

Lab Order **1808720**

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-11 (R)

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 2:16:00 PM

 Lab ID:
 1808720-002
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	22	3.6		mg/Kg	1	8/13/2018 11:26:18 AM	A53389
Surr: BFB	116	70-130		%Rec	1	8/13/2018 11:26:18 AM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	20	9.8		mg/Kg	1	8/13/2018 11:42:39 AM	39736
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/13/2018 11:42:39 AM	39736
Surr: DNOP	82.7	50.6-138		%Rec	1	8/13/2018 11:42:39 AM	39736
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	0.052	0.018		mg/Kg	1	8/13/2018 11:26:18 AM	C53389
Toluene	0.30	0.036		mg/Kg	1	8/13/2018 11:26:18 AM	C53389
Ethylbenzene	0.079	0.036		mg/Kg	1	8/13/2018 11:26:18 AM	C53389
Xylenes, Total	0.89	0.073		mg/Kg	1	8/13/2018 11:26:18 AM	C53389
Surr: 4-Bromofluorobenzene	132	70-130	S	%Rec	1	8/13/2018 11:26:18 AM	C53389
Surr: Toluene-d8	97.5	70-130		%Rec	1	8/13/2018 11:26:18 AM	C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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			Analyte detected below quantitation limits Page 2 of 11
	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

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17 (R)

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 2:03:00 PM

 Lab ID:
 1808720-003
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	28	17	mg/Kg	5	8/13/2018 11:49:23 AM	A53389
Surr: BFB	110	70-130	%Rec	5	8/13/2018 11:49:23 AM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	77	9.5	mg/Kg	1	8/13/2018 12:04:40 PM	39736
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/13/2018 12:04:40 PM	39736
Surr: DNOP	85.7	50.6-138	%Rec	1	8/13/2018 12:04:40 PM	39736
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.086	mg/Kg	5	8/13/2018 11:49:23 AM	C53389
Toluene	ND	0.17	mg/Kg	5	8/13/2018 11:49:23 AM	C53389
Ethylbenzene	ND	0.17	mg/Kg	5	8/13/2018 11:49:23 AM	C53389
Xylenes, Total	ND	0.34	mg/Kg	5	8/13/2018 11:49:23 AM	C53389
Surr: 4-Bromofluorobenzene	125	70-130	%Rec	5	8/13/2018 11:49:23 AM	C53389
Surr: Toluene-d8	101	70-130	%Rec	5	8/13/2018 11:49:23 AM	C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 11
	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

Lab Order **1808720**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 8/14/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-25 (R)

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 2:09:00 PM

 Lab ID:
 1808720-004
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed I	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst:	AG
Gasoline Range Organics (GRO)	ND	3.3	mg/Kg	1	8/13/2018 12:12:32 PM	A53389
Surr: BFB	110	70-130	%Rec	1	8/13/2018 12:12:32 PM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: I	Irm
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	8/13/2018 12:26:39 PM	39736
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/13/2018 12:26:39 PM	39736
Surr: DNOP	75.9	50.6-138	%Rec	1	8/13/2018 12:26:39 PM 3	39736
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst:	AG
Benzene	0.030	0.017	mg/Kg	1	8/13/2018 12:12:32 PM	C53389
Toluene	0.14	0.033	mg/Kg	1	8/13/2018 12:12:32 PM	C53389
Ethylbenzene	ND	0.033	mg/Kg	1	8/13/2018 12:12:32 PM	C53389
Xylenes, Total	0.11	0.066	mg/Kg	1	8/13/2018 12:12:32 PM	C53389
Surr: 4-Bromofluorobenzene	125	70-130	%Rec	1	8/13/2018 12:12:32 PM	C53389
Surr: Toluene-d8	95.3	70-130	%Rec	1	8/13/2018 12:12:32 PM (C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 11
	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

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SP-4

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 8:30:00 AM

 Lab ID:
 1808720-005
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	4.1	3.5		mg/Kg	1	8/13/2018 12:35:39 PM	A53389
Surr: BFB	120	70-130		%Rec	1	8/13/2018 12:35:39 PM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	37	9.5		mg/Kg	1	8/13/2018 11:24:24 AM	39736
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	8/13/2018 11:24:24 AM	39736
Surr: DNOP	99.1	50.6-138		%Rec	1	8/13/2018 11:24:24 AM	39736
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	ND	0.018		mg/Kg	1	8/13/2018 12:35:39 PM	C53389
Toluene	ND	0.035		mg/Kg	1	8/13/2018 12:35:39 PM	C53389
Ethylbenzene	ND	0.035		mg/Kg	1	8/13/2018 12:35:39 PM	C53389
Xylenes, Total	ND	0.071		mg/Kg	1	8/13/2018 12:35:39 PM	C53389
Surr: 4-Bromofluorobenzene	136	70-130	S	%Rec	1	8/13/2018 12:35:39 PM	C53389
Surr: Toluene-d8	94.3	70-130		%Rec	1	8/13/2018 12:35:39 PM	C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 11
	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

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SP-8

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 8:35:00 AM

 Lab ID:
 1808720-006
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Bate	ch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: AG	i
Gasoline Range Organics (GRO)	4.6	3.5	mg/Kg	1	8/13/2018 12:58:43 PM A53	3389
Surr: BFB	120	70-130	%Rec	1	8/13/2018 12:58:43 PM A53	3389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: Irm	ì
Diesel Range Organics (DRO)	32	9.3	mg/Kg	1	8/13/2018 10:59:59 AM 397	'36
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	8/13/2018 10:59:59 AM 397	'36
Surr: DNOP	96.0	50.6-138	%Rec	1	8/13/2018 10:59:59 AM 397	'36
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: AG	I
Benzene	ND	0.018	mg/Kg	1	8/13/2018 12:58:43 PM C53	3389
Toluene	ND	0.035	mg/Kg	1	8/13/2018 12:58:43 PM C53	3389
Ethylbenzene	ND	0.035	mg/Kg	1	8/13/2018 12:58:43 PM C53	3389
Xylenes, Total	ND	0.071	mg/Kg	1	8/13/2018 12:58:43 PM C53	3389
Surr: 4-Bromofluorobenzene	129	70-130	%Rec	1	8/13/2018 12:58:43 PM C53	3389
Surr: Toluene-d8	97.5	70-130	%Rec	1	8/13/2018 12:58:43 PM C53	3389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 11
	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

Lab Order **1808720**

Date Reported: 8/14/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: Island

 Project:
 HEC Lucerne 1
 Collection Date: 8/10/2018 2:45:00 PM

 Lab ID:
 1808720-007
 Matrix: SOIL
 Received Date: 8/11/2018 10:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	8/13/2018 1:21:52 PM	A53389
Surr: BFB	114	70-130	%Rec	1	8/13/2018 1:21:52 PM	A53389
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	29	9.5	mg/Kg	1	8/13/2018 10:35:37 AM	39736
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/13/2018 10:35:37 AM	39736
Surr: DNOP	92.0	50.6-138	%Rec	1	8/13/2018 10:35:37 AM	39736
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.019	mg/Kg	1	8/13/2018 1:21:52 PM	C53389
Toluene	ND	0.037	mg/Kg	1	8/13/2018 1:21:52 PM	C53389
Ethylbenzene	ND	0.037	mg/Kg	1	8/13/2018 1:21:52 PM	C53389
Xylenes, Total	ND	0.075	mg/Kg	1	8/13/2018 1:21:52 PM	C53389
Surr: 4-Bromofluorobenzene	129	70-130	%Rec	1	8/13/2018 1:21:52 PM	C53389
Surr: Toluene-d8	95.5	70-130	%Rec	1	8/13/2018 1:21:52 PM	C53389

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 11
	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, Inc.

WO#: 1808720

14-Aug-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID MB-39736 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 39736 RunNo: 53383 Analysis Date: 8/13/2018 Prep Date: 8/13/2018 SeqNo: 1758231 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 6.5 10.00 65.4 50.6 138

Sample ID LCS-39736 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 39736 RunNo: 53383

Analysis Date: 8/13/2018 Prep Date: 8/13/2018 SeqNo: 1758232 Units: mg/Kg

Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) 45 10 90.3 70 50.00 130 Surr: DNOP 3.3 5.000 66.5 50.6 138

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 8 of 11

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808720**

14-Aug-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 100ng Ics	SampT	ype: LC	S4	TestCode: EPA Method 8260B: Volatiles Short List						
Client ID: BatchQC	Batch	n ID: C5	3389	RunNo: 53389						
Prep Date:	Analysis Date: 8/13/2018			SeqNo: 1758221 U			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	80	120			
Toluene	1.1	0.050	1.000	0	108	80	120			
Ethylbenzene	1.1	0.050	1.000	0	110	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	0.51		0.5000		103	70	130			
Surr: Toluene-d8	0.49		0.5000		97.5	70	130			

Sample ID rb	SampType: MBLK TestCode: EPA Method					PA Method	I 8260B: Volatiles Short List				
Client ID: PBS	Batc	3389	F	RunNo: 53389							
Prep Date:	Date: Analysis Date: 8/13/2018		5	SeqNo: 1	758230	(g	J				
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	0.59		0.5000		118	70	130				
Surr: Toluene-d8	0.50		0.5000		99.9	70	130				

Sample ID 1808720-001AMS	Samp ⁻	Гуре: М	64	Tes	tCode: E	PA Method	8260B: Volat	tiles Short	List	
Client ID: SC-3 (R)	Batc	h ID: C5	3389	F	RunNo: 5	3389				
Prep Date:	Analysis [Date: 8/	13/2018	9	SeqNo: 1	759042	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.4	0.085	3.385	0	100	80	120			
Toluene	3.6	0.17	3.385	0	107	80	120			
Ethylbenzene	3.7	0.17	3.385	0.02908	107	82	121			
Xylenes, Total	11	0.34	10.16	0.08222	107	80.2	120			
Surr: 4-Bromofluorobenzene	1.9		1.693		111	70	130			
Surr: Toluene-d8	1.7		1.693		102	70	130			

Sample ID 1808720-001AMS	Samp1	уре: М S	SD4	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: SC-3 (R)	Batcl	n ID: C5	3389	R	RunNo: 5	3389				
Prep Date:	Analysis D	Date: 8/	13/2018	S	SeqNo: 1	759043	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.2	0.085	3.385	0	94.6	80	120	5.82	20	
Toluene	3.4	0.17	3.385	0	100	80	120	6.88	20	
Ethylbenzene	3.5	0.17	3.385	0.02908	102	82	121	5.22	20	
Xylenes, Total	10	0.34	10.16	0.08222	101	80.2	120	5.09	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 Detection Limit
- W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

Analysis Date: 8/13/2018

Result

0.64

0.48

WO#: 1808720

14-Aug-18

Client: Rule Engineering LLC **Project:** HEC Lucerne 1

Sample ID 1808720-001AM	SD SampType: M	SD4	Test	Code: E	PA Method	8260B: Vola	tiles Short	t List	
Client ID: SC-3 (R)	Batch ID: C	53389	R	unNo: 5	3389				
Prep Date:	Analysis Date: 8	3/13/2018	S	eqNo: 1	759043	Units: mg/k	(g		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	1.8	1.693		107	70	130	0	0	
Surr: Toluene-d8	1.6	1.693		96.7	70	130	0	0	
Sample ID Ics-39720	SampType: L0	CS4	Test	Code: E	PA Method	8260B: Vola	tiles Short	t List	
Client ID: BatchQC	Batch ID: 39	9720	R	unNo: 5	3389				
Prep Date: 8/10/2018	Analysis Date: 8	3/13/2018	S	eqNo: 1	759044	Units: %Re	С		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.56	0.5000		113	70	130			
Surr: Toluene-d8	0.48	0.5000		95.2	70	130			
Sample ID Ics-39723	SampType: L0	CS4	Test	Code: E	PA Method	8260B: Vola	tiles Short	t List	
Client ID: BatchQC	Batch ID: 39	9723	R	unNo: 5	3389				
Prep Date: 8/10/2018	Analysis Date: 8	3/13/2018	S	eqNo: 1	759045	Units: %Re	С		
Analyte	Result PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.58	0.5000		116	70	130			
Surr: Toluene-d8	0.45	0.5000		90.7	70	130			
Sample ID mb-39720	SampType: M	BLK	Test	Code: E	PA Method	8260B: Vola	tiles Short	t List	
Client ID: PBS	Batch ID: 39	9720	R	unNo: 5	3389				

Sample ID mb-39723	SampTy	ре: МЕ	BLK	Test	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batch	ID: 39	723	R	tunNo: 5	3389				
Prep Date: 8/10/2018	Analysis Da	ite: 8/	13/2018	S	SeqNo: 1	759047	Units: %Red	C		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.64		0.5000		128	70	130			
Surr: Toluene-d8	0.48		0.5000		95.6	70	130			

SPK value SPK Ref Val

0.5000

0.5000

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit **PQL**

Prep Date: 8/10/2018

Surr: 4-Bromofluorobenzene

Surr: Toluene-d8

Analyte

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

SeqNo: 1759046

LowLimit

70

70

%REC

128

95.1

Units: %Rec

130

130

%RPD

RPDLimit

Qual

HighLimit

Page 10 of 11

P Sample pH Not In Range

Reporting Detection Limit RL

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808720**

14-Aug-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 2.5ug gro lcs SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Batch ID: A53389 RunNo: 53389

Prep Date: Analysis Date: 8/13/2018 SeqNo: 1758218 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
 70
 130

 Surr: BFB
 480
 500.0
 95.5
 70
 130

Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS Batch ID: A53389 RunNo: 53389

Prep Date: Analysis Date: 8/13/2018 SeqNo: 1758219 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 530 500.0 105 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 11 of 11



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: i	RULE ENGINEERING LL	Work Order Numb	per: 1808	720		RcptNo	: 1
Received By:	Isaiah Ortiz	8/11/2018 10:30:00	АМ		I B	and the second s	
Completed By:	Anne Thorne	8/13/2018 7:34:48	AM		Om Il		
Reviewed By:	18	8/13/18			<i>And y</i> , -		
Labele Bby	: AT 08/13/19						
Chain of Custo	<u>ody</u>						
1. Is Chain of Cus	stody complete?		Yes	\checkmark	No 🗌	Not Present	
2. How was the sa	ample delivered?		Cour	<u>ier</u>			
<u>Log In</u>							
	t made to cool the samples?		Yes	✓	No 🗌	NA \square	
4. Were all sample	es received at a temperature	of >0° C to 6.0°C	Yes	\checkmark	No 🗌	NA \square	
5. Sample(s) in pro	oper container(s)?		Yes	~	No 🗆		
	opu. coao.(o).		, 55		_		
6. Sufficient sample	le volume for indicated test(s)	?	Yes	✓	No 🗆		
7. Are samples (ex	ccept VOA and ONG) properly	preserved?	Yes	✓	No 🗌	•	
8. Was preservativ	e added to bottles?		Yes		No 🗸	NA 🗆	
9. VOA vials have	zero headsnace?		Yes		No 🗌	No VOA Vials	
	ple containers received broker	12	Yes		No 🗹		
10: Troid any bamp	no domanioro rocorros pronor	•	100			# of preserved bottles checked	
11. Does paperwork	c match bottle labels?		Yes	V	No 🗆	for pH:	
(Note discrepan-	cies on chain of custody)			_			r >12 unless noted)
	rrectly identified on Chain of (Custody?		Y	No 🗀	Adjusted?	
	analyses were requested?			✓	No 🗀	Obs. deside	
	times able to be met? tomer for authorization.)		Yes	✓	No 🗀	Checked by:	
	ng (if applicable)				m		
15. Was client notif	fied of all discrepancies with t	nis order?	Yes		No ∐	NA 🗹	
Person N	otified:	Date	J				
By Whom	1:	Via:	✓ eMa	iil 🗌 Pi	hone 🗌 Fax	In Person	
Regarding	g:					_	
Client Ins	tructions:		· · · · · · · · · · · · · · · · · · ·				
16. Additional rema	arks:						_
17. <u>Cooler Inform</u>	ation						
Cooler No.		al Intact Seal No	Seal Da	ite	Signed By		
1	2.1 Good Yes]	

	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis Request	^t O [∜]) BO)	(S) (W /	OA MIS	(1.4 (1.4 (1.4 (1.4 (1.4 (1.4 (1.4 (1.4	+ 1 5 R 4 1 5 S 10 10 10 10 10 10 10 10 10 10 10 10 10	B(S) (S) (S) (S) (S) (S) (S) (S) (S) (S)	BTEX + MT BTEX + MT BTEX + MT BTEX + MT TPH 8015E TPH (Methore) BCRA 8 MG RCRA 9 MG RC	7	× ×	X X		X	X X				त हैता र	clo chara cardoza		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.
Turn-Around Time:	□ Standard \ Rush Same Day	Project Name:		Project #		Project Manager:		Headher Woods	7	1000	Sample Temperature. 7.1	Container Preservative HEAL No. Type and # Type	Meat Kit Mother (1)	72 1 1	802-	102-	502-	102	102 7 7			Received by: Date Time Moth M. 8/1/16 / 448	Received by: Date Time	-CON COURTES 8/11/18 1030	ubcontracted to other accredited laboratones. This serves as notice of this
Chain-of-Custody Record	Client: Rule Engingering 11 C		Mailing Address: 501 Arrowy Dr. St. 205		Phone #: (505) 710 - 2787	email or Fax#: humods Orules raginesering. Com	QA/QC Package:	☐ Level 4 (Full Validation)	Accreditation		□ EDD (Type)	Date Time Matrix Sample Request ID	81/18 1427 Soil SC-3(R)	ij	403 5011	1409	2830 Soʻl I	8/10/18 0835 Soll SP-8	5ph(Date: Time: Refinduished by: WWG I HUB (NAT)	Date: Time: Relinquished by:	My Hous Meal	If necessary, samples submitted to Hall Environmental may be su-



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

August 24, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: Lucerne 1 OrderNo.: 1808E15

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/23/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **1808E15**Date Reported: **8/24/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-17

 Project:
 Lucerne 1
 Collection Date: 8/22/2018 9:11:00 AM

 Lab ID:
 1808E15-001
 Matrix: SOIL
 Received Date: 8/23/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: AG
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	8/23/2018 10:27:33 AM B5366
Surr: BFB	110	70-130	%Rec	1	8/23/2018 10:27:33 AM B5366
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: Irm
Diesel Range Organics (DRO)	11	9.9	mg/Kg	1	8/23/2018 10:07:45 AM 39950
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/23/2018 10:07:45 AM 39950
Surr: DNOP	112	50.6-138	%Rec	1	8/23/2018 10:07:45 AM 39950
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: AG
Benzene	ND	0.019	mg/Kg	1	8/23/2018 10:27:33 AM A5366
Toluene	ND	0.038	mg/Kg	1	8/23/2018 10:27:33 AM A5366
Ethylbenzene	ND	0.038	mg/Kg	1	8/23/2018 10:27:33 AM A5366
Xylenes, Total	ND	0.075	mg/Kg	1	8/23/2018 10:27:33 AM A5366
Surr: 4-Bromofluorobenzene	123	70-130	%Rec	1	8/23/2018 10:27:33 AM A5366
Surr: Toluene-d8	98.1	70-130	%Rec	1	8/23/2018 10:27:33 AM A5366

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 5
	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, Inc.

WO#: 1808E15

24-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39950 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 39950 RunNo: 53643 Prep Date: 8/23/2018 Analysis Date: 8/23/2018 SeqNo: 1769069 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-39950 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 39950 RunNo: 53643

Prep Date: Analysis Date: 8/23/2018 SeqNo: 1769181 8/23/2018 Units: mg/Kg

Analyte Result SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 10 47 50.00 93.3 70 130 Surr: DNOP 4.9 5.000 97.5 50.6 138

Sample ID 1808E15-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: SC-17 Batch ID: 39950 RunNo: 53643

Prep Date: 8/23/2018 Analysis Date: 8/23/2018 SeqNo: 1769449 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) 53 9.8 49.21 10.61 86.8 53.5 126 Surr: DNOP 5.1 4.921 103 50.6 138

Sample ID 1808E15-001AMSD TestCode: EPA Method 8015M/D: Diesel Range Organics SampType: MSD

Client ID: SC-17 Batch ID: 39950 RunNo: 53643

Prep Date: 8/23/2018 Analysis Date: 8/23/2018 SeqNo: 1769450 Units: mg/Kg

LowLimit SPK value SPK Ref Val %RPD **RPDLimit** Analyte Result **PQL** %REC HighLimit Qual Diesel Range Organics (DRO) 55 9.7 48.64 10.61 90.9 53.5 126 2.79 21.7 Surr: DNOP 5.2 4.864 107 50.6 138 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 2 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808E15**

24-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 100ng Ics	SampT	ype: LC	S4	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: BatchQC	Batch	n ID: A5	3667	F	RunNo: 5	3667				
Prep Date:	Analysis D	Date: 8/ 3	23/2018	9	SeqNo: 1	769874	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	1.000	0	105	80	120			
Toluene	1.1	0.050	1.000	0	109	80	120			
Ethylbenzene	1.1	0.050	1.000	0	110	80	120			
Xylenes, Total	3.2	0.10	3.000	0	107	80	120			
Surr: 4-Bromofluorobenzene	0.52		0.5000		103	70	130			
Surr: Toluene-d8	0.53		0.5000		105	70	130			

Sample ID 1808e15-001ams	SampT	уре: М \$	64	Tes	tCode: El	PA Method	8260B: Vola	tiles Short	List	
Client ID: SC-17	Batcl	h ID: A5	3667	F	RunNo: 5	3667				
Prep Date:	Analysis D	Date: 8/	23/2018	S	SeqNo: 1	769876	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.74	0.019	0.7502	0	98.0	80	120			
Toluene	0.78	0.038	0.7502	0.004674	104	80	120			
Ethylbenzene	0.80	0.038	0.7502	0.006144	106	82	121			
Xylenes, Total	2.5	0.075	2.251	0.03467	109	80.2	120			
Surr: 4-Bromofluorobenzene	0.43		0.3751		115	70	130			
Surr: Toluene-d8	0.37		0.3751		98.0	70	130			

Sample ID 1808e15-001ams	d Samp1	Гуре: МS	SD4	Tes	tCode: E	PA Method	8260B: Vola	tiles Short	List	
Client ID: SC-17	Batcl	h ID: A5	3667	F	RunNo: 5	3667				
Prep Date:	Analysis D	Date: 8/	23/2018	8	SeqNo: 1	769877	Units: mg/k	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.71	0.019	0.7502	0	94.9	80	120	3.25	20	
Toluene	0.77	0.038	0.7502	0.004674	102	80	120	1.98	20	
Ethylbenzene	0.81	0.038	0.7502	0.006144	107	82	121	1.02	20	
Xylenes, Total	2.4	0.075	2.251	0.03467	107	80.2	120	1.51	20	
Surr: 4-Bromofluorobenzene	0.44		0.3751		118	70	130	0	0	
Surr: Toluene-d8	0.36		0.3751		96.0	70	130	0	0	

Sample ID rb	SampT	ype: ME	BLK	Tes	tCode: El	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batcl	n ID: A5	3667	R	RunNo: 5	3667				
Prep Date:	Analysis D	Date: 8/	23/2018	S	SeqNo: 1	769878	Units: mg/K	.g		
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								

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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 3 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808E15**

24-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID rb SampType: MBLK TestCode: EPA Method 8260B: Volatiles Short List

Client ID: PBS Batch ID: A53667 RunNo: 53667

Prep Date: Analysis Date: 8/23/2018 SeqNo: 1769878 Units: mg/Kg

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

 Surr: 4-Bromofluorobenzene
 0.56
 0.5000
 113
 70
 130

 Surr: Toluene-d8
 0.51
 0.5000
 102
 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 Detection Limit

W Sample container temperature is out of limit as specified

Page 4 of 5

Hall Environmental Analysis Laboratory, Inc.

WO#: 1808E15

24-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID 1808e15-001ams SampType: MS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-17 Batch ID: **B53667** RunNo: 53667 Prep Date: Analysis Date: 8/23/2018 SeqNo: 1769869 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual 97.5 Gasoline Range Organics (GRO) 1.973 64.7 20 3.8 18.76 142 Surr: BFB 400 375.1 105 130

Sample ID 1808e15-001amsd SampType: MSD TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-17 Batch ID: **B53667** RunNo: 53667 Prep Date: Analysis Date: 8/23/2018 SeqNo: 1769870 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 3.8 18.76 1.973 96.7 64.7 142 0.706 20 Surr: BFB 410 375.1 109 70 130 0

Sample ID 2.5ug gro lcs SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: LCSS Batch ID: **B53667** RunNo: 53667 Prep Date: Analysis Date: 8/23/2018 SeqNo: 1769871 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Gasoline Range Organics (GRO) 25 5.0 25.00 102 70 130 Surr: BFB 480 500.0 95.5 70 130

Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: PBS Batch ID: **B53667** RunNo: 53667 Analysis Date: 8/23/2018 Prep Date: SeqNo: 1769872 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 500 500.0 100 70 130

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J
- Analyte detected below quantitation limits
- P Sample pH Not In Range
- RLReporting Detection Limit
- Sample container temperature is out of limit as specified

Page 5 of 5



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 EN	GINEERING LL	Work Order Nur	nber: 1808E15		RcptNo:	1
Received By	: Anne The	orne	8/23/2018 7:00:00	AM	Aane St. Aane St.		
Completed B	y: Anne The	orne	8/23/2018 7:17:45	S AM	Om 1		
Reviewed By	: AL 8/2	3/18			CAME JA		
Labo	led by	ATO	1/2=/13				
Chain of C	-		1211				
	f Custody com	plete?		Yes 🗹	No 🗆	Not Present	
2. How was t	he sample deli	vered?		<u>Courier</u>			
<u>Log In</u>			•				
3. Was an at	tempt made to	cool the sample	s?	Yes 🗸	No 🗆	NA 🗌	
4. Were all sa	ımples receive	d at a temperatu	re of >0° C to 6.0°C	Yes 🗸	No 🗆	NA 🗆	
5. Sample(s)	in proper conta	ainer(s)?		Yes 🗹	No 🗆		
6. Sufficient s	ample volume	for indicated tes	t(s)?	Yes 🗹	No 🗌		
7. Are sample	s (except VOA	and ONG) prop	erly preserved?	Yes 🗹	No 🗌		
8. Was preser	rvative added t	o bottles?		Yes 🗌	No 🗹	NA \square	
9. VOA vials t	nave zero head	Ispace?		Yes 🗌	No 🗆	No VOA Vials 🗹	
10, Were any s	sample contain	ers received bro	ken?	Yes 🗀	No 🗹	# of preserved	
11. Does paper (Note discre		ottle labels? nain of custody)		Yes 🔽	No 🗆	bottles checked for pH:	>12 unless noted)
•	•	ntified on Chain	of Custody?	Yes 🗸	No 🗌	Adjusted?	
		ere requested?	•	Yes 🗹	No 🗌		
14. Were all ho (If no, notify	lding times abl			Yes 🗹	No 🗀	Checked by:	
Special Han	dling (if ap	plicable)					
15. Was client	notified of all o	liscrepancies wi	th this order?	Yes	No 🗆	NA 🗹	,
Pers	on Notified:		Date	•			
By W	/hom:		Via:	eMail	Phone Fax	In Person	
Rega	rding:						
Clien	t Instructions:	.				:	
16. Additional	remarks:						
17. <u>Cooler int</u>				ļ		1	
Cooler I	1850		Seal Intact Seal No	Seal Date	Signed By		
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Turn-Around Time:	☐ Standard	Project Name:	T Luche	Project #:		Project Ma	The ork	Sampler:	Sample Te	Container Type and #			:				 Received by:	Received by:	contracted to oth
Chain-of-Custody Record	Client: Pull Frain Review 11.C		Mailing Address: Gi Hillory Dr Suite	WS forminghan was grilled the		email or Fax#: youlde agoute any pressing, and	ge: ⊂ □ i evel 4 (Full Validation)	Other		ne Matrix Sample Request ID	50.17						Relingatished by:	Relinquished by:	, samples submitted to Hall Environr
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

August 29, 2018

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

FAX

RE: Lucerne 1 OrderNo.: 1808E48

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/23/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order **1808E48**Date Reported: **8/29/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-26

 Project:
 Lucerne 1
 Collection Date: 8/22/2018 9:17:00 AM

 Lab ID:
 1808E48-001
 Matrix: SOIL
 Received Date: 8/23/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE (ORGANICS				Analyst	: Irm
Diesel Range Organics (DRO)	11	9.9	mg/Kg	1	8/27/2018 8:34:47 PM	39983
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	8/27/2018 8:34:47 PM	39983
Surr: DNOP	124	50.6-138	%Rec	1	8/27/2018 8:34:47 PM	39983
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.8	mg/Kg	1	8/27/2018 5:04:57 PM	39981
Surr: BFB	97.3	15-316	%Rec	1	8/27/2018 5:04:57 PM	39981
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.053	0.024	mg/Kg	1	8/27/2018 5:04:57 PM	39981
Toluene	0.18	0.048	mg/Kg	1	8/27/2018 5:04:57 PM	39981
Ethylbenzene	ND	0.048	mg/Kg	1	8/27/2018 5:04:57 PM	39981
Xylenes, Total	0.35	0.096	mg/Kg	1	8/27/2018 5:04:57 PM	39981
Surr: 4-Bromofluorobenzene	95.8	80-120	%Rec	1	8/27/2018 5:04:57 PM	39981

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 7
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	PQL Practical Quanitative Limit			Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

Analytical ReportLab Order **1808E48**

Date Reported: 8/29/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-27

 Project:
 Lucerne 1
 Collection Date: 8/22/2018 9:23:00 AM

 Lab ID:
 1808E48-002
 Matrix: SOIL
 Received Date: 8/23/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	8/27/2018 8:56:49 PM	39983
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/27/2018 8:56:49 PM	39983
Surr: DNOP	115	50.6-138	%Rec	1	8/27/2018 8:56:49 PM	39983
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	5.0	mg/Kg	1	8/27/2018 5:28:25 PM	39981
Surr: BFB	95.1	15-316	%Rec	1	8/27/2018 5:28:25 PM	39981
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.025	mg/Kg	1	8/27/2018 5:28:25 PM	39981
Toluene	0.082	0.050	mg/Kg	1	8/27/2018 5:28:25 PM	39981
Ethylbenzene	ND	0.050	mg/Kg	1	8/27/2018 5:28:25 PM	39981
Xylenes, Total	0.11	0.10	mg/Kg	1	8/27/2018 5:28:25 PM	39981
Surr: 4-Bromofluorobenzene	95.2	80-120	%Rec	1	8/27/2018 5:28:25 PM	39981

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank	
	D	Sample Diluted Due to Matrix	E	Value above quantitation range	
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 7	
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range	
	PQL Practical Quanitative Limit		RL	Reporting Detection Limit	
	S	S % Recovery outside of range due to dilution or matrix W Sample container temperature is out of lim			

Analytical Report

Lab Order **1808E48**Date Reported: **8/29/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-28

 Project:
 Lucerne 1
 Collection Date: 8/22/2018 9:30:00 AM

 Lab ID:
 1808E48-003
 Matrix: SOIL
 Received Date: 8/23/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.6	mg/Kg	1	8/27/2018 9:18:50 PM	39983
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	8/27/2018 9:18:50 PM	39983
Surr: DNOP	112	50.6-138	%Rec	1	8/27/2018 9:18:50 PM	39983
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	8/27/2018 5:51:53 PM	39981
Surr: BFB	94.5	15-316	%Rec	1	8/27/2018 5:51:53 PM	39981
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	8/27/2018 5:51:53 PM	39981
Toluene	ND	0.046	mg/Kg	1	8/27/2018 5:51:53 PM	39981
Ethylbenzene	ND	0.046	mg/Kg	1	8/27/2018 5:51:53 PM	39981
Xylenes, Total	ND	0.092	mg/Kg	1	8/27/2018 5:51:53 PM	39981
Surr: 4-Bromofluorobenzene	96.2	80-120	%Rec	1	8/27/2018 5:51:53 PM	39981

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7
	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 **1808E48**Date Reported: **8/29/2018**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-29

 Project:
 Lucerne 1
 Collection Date: 8/22/2018 9:40:00 AM

 Lab ID:
 1808E48-004
 Matrix: SOIL
 Received Date: 8/23/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	8/27/2018 9:40:54 PM	39983
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	8/27/2018 9:40:54 PM	39983
Surr: DNOP	116	50.6-138	%Rec	1	8/27/2018 9:40:54 PM	39983
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.7	mg/Kg	1	8/27/2018 6:15:19 PM	39981
Surr: BFB	91.1	15-316	%Rec	1	8/27/2018 6:15:19 PM	39981
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.024	mg/Kg	1	8/27/2018 6:15:19 PM	39981
Toluene	ND	0.047	mg/Kg	1	8/27/2018 6:15:19 PM	39981
Ethylbenzene	ND	0.047	mg/Kg	1	8/27/2018 6:15:19 PM	39981
Xylenes, Total	ND	0.095	mg/Kg	1	8/27/2018 6:15:19 PM	39981
Surr: 4-Bromofluorobenzene	92.9	80-120	%Rec	1	8/27/2018 6:15:19 PM	39981

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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			Analyte detected below quantitation limits Page 4 of 7	
	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	covery outside of range due to dilution or matrix W Sample container temperature is out of limit as		

Hall Environmental Analysis Laboratory, Inc.

5.8

WO#: 1808E48

29-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Surr: DNOP

Sample ID MB-39983 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: **PBS** Batch ID: 39983 RunNo: 53721 Prep Date: 8/24/2018 Analysis Date: 8/27/2018 SeqNo: 1772381 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) ND 10 ND 50

Motor Oil Range Organics (MRO)

Surr: DNOP 12 50.6 10.00 116 138

5.000

Sample ID LCS-39983 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 39983 RunNo: 53721 Analysis Date: 8/27/2018 Prep Date: 8/24/2018 SeqNo: 1773347 Units: mg/Kg Analyte SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 10 0 70 51 50.00 102 130

115

50.6

138

Qualifiers:

- Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- Η Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- POL Practical Quanitative Limit
- % Recovery outside of range due to dilution or matrix
- В Analyte detected in the associated Method Blank
- Е Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- Sample container temperature is out of limit as specified

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: **1808E48**

29-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39981 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018 Analysis Date: 8/27/2018 SeqNo: 1772556 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 940 1000 93.6 15 316

Sample ID LCS-39981 SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018 Analysis Date: 8/27/2018 SeqNo: 1772557 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
 102
 75.9
 131

 Surr: BFB
 1100
 1000
 106
 15
 316

Sample ID 1808E48-002AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-27 Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018 Analysis Date: 8/27/2018 SeqNo: 1772560 Units: mg/Kg

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Gasoline Range Organics (GRO) 31 23.06 133 77.8 128 S

Surr: BFB 990 922.5 108 15 316

Sample ID 1808E48-002AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-27 Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018 Analysis Date: 8/27/2018 SeqNo: 1772561 Units: mg/Kg

Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 33 4.8 24.20 138 77.8 128 7.86 20 S Λ Surr: BFB 1000 968.1 108 15 316 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

D C 1 HN / I D

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1808E48

29-Aug-18

Client: Rule Engineering LLC

Project: Lucerne 1

Sample ID MB-39981 SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: 39981 RunNo: 53734

Analysis Date: 8/27/2018 Prep Date: 8/24/2018 SeqNo: 1772586 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 96.4 80 120

Sample ID LCS-39981 SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018	Analysis [Date: 8/	27/2018	5	SeqNo: 1	772587	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.0	77.3	128			
Toluene	0.96	0.050	1.000	0	96.2	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	97.6	81.6	129			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID 1808E48-001AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SC-26 Batch ID: 39981 RunNo: 53734

Prep Date: 8/24/2018	Analysis [Date: 8/	27/2018	٤	SeqNo: 1	772589	Units: mg/k	ζg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	0.9833	0.05335	96.7	68.5	133			
Toluene	1.1	0.049	0.9833	0.1845	90.1	75	130			
Ethylbenzene	1.0	0.049	0.9833	0.03352	101	79.4	128			
Xylenes, Total	3.2	0.098	2.950	0.3452	97.7	77.3	131			
Surr: 4-Bromofluorobenzene	0.94		0.9833		95.6	80	120			

Sample ID 1808E48-001AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SC-26 Batch ID: 39981 RunNo: 53734

0				•						
Prep Date: 8/24/2018	Analysis D	Date: 8/	27/2018	SeqNo: 1772590			Units: mg/K			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.023	0.9141	0.05335	95.4	68.5	133	8.17	20	
Toluene	1.0	0.046	0.9141	0.1845	90.0	75	130	6.16	20	
Ethylbenzene	0.96	0.046	0.9141	0.03352	101	79.4	128	6.60	20	
Xylenes, Total	3.0	0.091	2.742	0.3452	98.0	77.3	131	6.20	20	
Surr: 4-Bromofluorobenzene	0.87		0.9141		95.7	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 7 of 7



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:	1808E4	18		RcptNo:	1
Received By:	Anne Thome	8/23/2018 7:00:00 AM		Anne	A		
Completed By:	Anne Thorne SAB 08/24/	8/23/2018 9:39:09 AM		Anne	A.	~	
Labeled b	, -, 2)	Š.					
Chain of Cus			_			:	
1. Is Chain of C	ustody complete?		Yes 🗸	<u>√</u> No		Not Present 🔲	
2. How was the	sample delivered?		<u>FedEx</u>				
Log In 3. Was an attern	npt made to cool the samples?	,	Yes 🗹] No		NA 🗆	
4. Were all samp	oles received at a temperature	of >0° C to 6.0°C	Yes 🗸	No.		NA \square	
5. Sample(s) in	proper container(s)?		Yes 🔽	No			
6. Sufficient sam	ple volume for indicated test(s	3)?	Yes 🗹	No			
7. Are samples (except VOA and ONG) proper	ly preserved?	Yes 🗹	No			
8. Was preserva	tive added to bottles?		Yes 🗌	No	✓	NA \square	
9. VOA vials hav	re zero headspace?		Yes 🗌	No		No VOA Vials ☑	
10, Were any san	nple containers received broke	en?	Yes	No.	V		
						# of preserved battles checked	77
	ork match bottle labels? ancies on chain of custody)		Yes 🗹	No		for pH:	>12 unless noted)
12. Are matrices o	correctly identified on Chain of	Custody?	Yes 🗸	No		Adjusted?	
[3] Is it clear what	t analyses were requested?		Yes 🗹	No		B 23 18	
	ng times able to be met? ustomer for authorization.)		Yes 🗹	No		Checked by:	
	ing (if applicable)						
	tified of all discrepancies with	this order?	Yes 🗆	No.		NA 🗹	
Person	Notified:	Date			CHECK CHANGE OF THE PERSON OF		
By Who	om:	Via:] eMail	☐ Phone ☐	Fax	☐ In Person	
Regardi	ing:			2.W.	***********		
Client In	nstructions:						
16. Additional rer	marks:						
17. <u>Cooler Infor</u>							
Cooler No			eal Date	Signed E	3у		
2	2.3 Good Ye 1.0 Good Ye		ru ··· u u u-u · u ·				
L		-		<u>i</u>			

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

September 18, 2018

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

FAX

RE: HEC Lucerne 1 OrderNo.: 1809830

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 9/14/2018 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 9/18/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-30

 Project:
 HEC Lucerne 1
 Collection Date: 9/13/2018 2:40:00 PM

 Lab ID:
 1809830-001
 Matrix: SOIL
 Received Date: 9/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed B	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: A	\G
Gasoline Range Organics (GRO)	ND	4.0	mg/Kg	1	9/14/2018 10:32:18 AM A	A54152
Surr: BFB	105	70-130	%Rec	1	9/14/2018 10:32:18 AM A	\ 54152
EPA METHOD 8015M/D: DIESEL RANGE ORGAI	NICS				Analyst: Ir	rm
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/14/2018 10:22:21 AM 4	10344
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	9/14/2018 10:22:21 AM 4	10344
Surr: DNOP	83.0	50.6-138	%Rec	1	9/14/2018 10:22:21 AM 4	10344
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: A	∤ G
Benzene	ND	0.020	mg/Kg	1	9/14/2018 10:32:18 AM B	354152
Toluene	ND	0.040	mg/Kg	1	9/14/2018 10:32:18 AM B	354152
Ethylbenzene	ND	0.040	mg/Kg	1	9/14/2018 10:32:18 AM B	354152
Xylenes, Total	ND	0.081	mg/Kg	1	9/14/2018 10:32:18 AM B	354152
Surr: 4-Bromofluorobenzene	117	70-130	%Rec	1	9/14/2018 10:32:18 AM B	354152
Surr: Toluene-d8	100	70-130	%Rec	1	9/14/2018 10:32:18 AM B	354152

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 8
	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

Date Reported: 9/18/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-31

 Project:
 HEC Lucerne 1
 Collection Date: 9/13/2018 2:48:00 PM

 Lab ID:
 1809830-002
 Matrix: SOIL
 Received Date: 9/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch	
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst: AG	
Gasoline Range Organics (GRO)	6.0	3.6	mg/Kg	1	9/14/2018 10:55:23 AM A5415	2
Surr: BFB	110	70-130	%Red	1	9/14/2018 10:55:23 AM A5415	2
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: Irm	
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/14/2018 10:46:44 AM 40344	
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	9/14/2018 10:46:44 AM 40344	
Surr: DNOP	84.2	50.6-138	%Red	1	9/14/2018 10:46:44 AM 40344	
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst: AG	
Benzene	0.019	0.018	mg/Kg	1	9/14/2018 10:55:23 AM B5415	2
Toluene	ND	0.036	mg/Kg	1	9/14/2018 10:55:23 AM B5415	2
Ethylbenzene	ND	0.036	mg/Kg	1	9/14/2018 10:55:23 AM B5415	2
Xylenes, Total	0.29	0.071	mg/Kg	1	9/14/2018 10:55:23 AM B5415	2
Surr: 4-Bromofluorobenzene	122	70-130	%Red	: 1	9/14/2018 10:55:23 AM B5415	2
Surr: Toluene-d8	94.8	70-130	%Red	1	9/14/2018 10:55:23 AM B5415	2

				-			
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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 Page 2 of 8			
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range			
	PQL	Practical Quanitative Limit	tative 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, Inc.

Date Reported: 9/18/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-32

 Project:
 HEC Lucerne 1
 Collection Date: 9/13/2018 3:25:00 PM

 Lab ID:
 1809830-003
 Matrix: SOIL
 Received Date: 9/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual Un	nits]	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.9	mg	g/Kg	1	9/14/2018 11:18:24 AM	A54152
Surr: BFB	104	70-130	%F	Rec	1	9/14/2018 11:18:24 AM	A54152
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg	g/Kg	1	9/14/2018 11:11:02 AM	40344
Motor Oil Range Organics (MRO)	ND	49	mg	g/Kg	1	9/14/2018 11:11:02 AM	40344
Surr: DNOP	83.8	50.6-138	%F	Rec	1	9/14/2018 11:11:02 AM	40344
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	0.038	0.020	mg	g/Kg	1	9/14/2018 11:18:24 AM	B54152
Toluene	0.15	0.039	mg	g/Kg	1	9/14/2018 11:18:24 AM	B54152
Ethylbenzene	ND	0.039	mg	g/Kg	1	9/14/2018 11:18:24 AM	B54152
Xylenes, Total	ND	0.079	mg	g/Kg	1	9/14/2018 11:18:24 AM	B54152
Surr: 4-Bromofluorobenzene	116	70-130	%F	Rec	1	9/14/2018 11:18:24 AM	B54152
Surr: Toluene-d8	94.7	70-130	%F	Rec	1	9/14/2018 11:18:24 AM	B54152

0 1'6'	*	William Control	D	A 1 (1 ((1) 1) 1 ((1) 1) 1			
Qualifiers:	~	Value exceeds Maximum Contaminant Level.	В	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 Page 3 of 8			
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range			
	PQL	Practical Quanitative Limit	ctical 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 specifi				

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 9/18/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-33

 Project:
 HEC Lucerne 1
 Collection Date: 9/13/2018 3:13:00 PM

 Lab ID:
 1809830-004
 Matrix: SOIL
 Received Date: 9/14/2018 7:00:00 AM

Analyses	Result	PQL	Qual 1	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE						Analyst	: AG
Gasoline Range Organics (GRO)	ND	3.9	I	mg/Kg	1	9/14/2018 11:41:32 AM	A54152
Surr: BFB	102	70-130	•	%Rec	1	9/14/2018 11:41:32 AM	A54152
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS					Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	1	mg/Kg	1	9/14/2018 11:35:34 AM	40344
Motor Oil Range Organics (MRO)	ND	49	1	mg/Kg	1	9/14/2018 11:35:34 AM	40344
Surr: DNOP	85.8	50.6-138	•	%Rec	1	9/14/2018 11:35:34 AM	40344
EPA METHOD 8260B: VOLATILES SHORT LIST						Analyst	: AG
Benzene	ND	0.019	1	mg/Kg	1	9/14/2018 11:41:32 AM	B54152
Toluene	ND	0.039	1	mg/Kg	1	9/14/2018 11:41:32 AM	B54152
Ethylbenzene	ND	0.039	1	mg/Kg	1	9/14/2018 11:41:32 AM	B54152
Xylenes, Total	0.078	0.078	1	mg/Kg	1	9/14/2018 11:41:32 AM	B54152
Surr: 4-Bromofluorobenzene	115	70-130		%Rec	1	9/14/2018 11:41:32 AM	B54152
Surr: Toluene-d8	94.4	70-130		%Rec	1	9/14/2018 11:41:32 AM	B54152

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank		
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range		
	H Holding times for preparation or analysis exceeded		J	Analyte detected below quantitation limits Page 4 of 8		
	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, Inc.

WO#: **1809830**

18-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID MB-40344 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 40344 RunNo: 54142

Prep Date: 9/14/2018 Analysis Date: 9/14/2018 SeqNo: 1790203 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 78.8 50.6 138

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 Detection Limit

W Sample container temperature is out of limit as specified

Page 5 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809830**

18-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 100ng btex Ics	SampType: LCS4 TestCode: EPA Method						8260B: Vola	tiles Short	List	
Client ID: BatchQC	Batch	n ID: B5	4152	F	RunNo: 5	4152				
Prep Date:	Analysis D	oate: 9/	14/2018	SeqNo: 1790348			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	1.1	0.050	1.000	0	105	80	120			
Ethylbenzene	1.1	0.050	1.000	0	107	80	120			
Xylenes, Total	3.1	0.10	3.000	0	103	80	120			
Surr: 4-Bromofluorobenzene	0.46		0.5000		92.4	70	130			
Surr: Toluene-d8	0.49		0.5000		97.7	70	130			

Sample ID rb	SampType: MBLK			TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: PBS	Batc	h ID: B5	4152	RunNo: 54152							
Prep Date:	Analysis Date: 9/14/2018			SeqNo: 1790354			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	0.53		0.5000		106	70	130				
Surr: Toluene-d8	0.52		0.5000		104	70	130				

Sample ID 1809830-002ams	Samp1	уре: М	64	TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: SC-31	Batcl	h ID: B5	4152	RunNo: 54152							
Prep Date:	Analysis Date: 9/14/2018			SeqNo: 1791514			Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.75	0.018	0.7133	0.01910	102	80	120				
Toluene	0.79	0.036	0.7133	0.02481	107	80	120				
Ethylbenzene	0.83	0.036	0.7133	0.03022	112	82	121				
Xylenes, Total	2.6	0.071	2.140	0.2895	109	80.2	120				
Surr: 4-Bromofluorobenzene	0.41		0.3566		115	70	130				
Surr: Toluene-d8	0.34		0.3566		95.4	70	130				

Sample ID 1809830-002amsc	I SampT	уре: М	SD4	TestCode: EPA Method 8260B: Volatiles Short List							
Client ID: SC-31	Batch ID: B54152			RunNo: 54152							
Prep Date:	Analysis Date: 9/14/2018			SeqNo: 1791515			Units: mg/K	g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual	
Benzene	0.70	0.018	0.7133	0.01910	95.2	80	120	6.51	20		
Toluene	0.74	0.036	0.7133	0.02481	100	80	120	6.60	20		
Ethylbenzene	0.76	0.036	0.7133	0.03022	102	82	121	8.58	20		
Xylenes, Total	2.5	0.071	2.140	0.2895	103	80.2	120	5.22	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 Detection Limit

W Sample container temperature is out of limit as specified

Page 6 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809830

18-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 1809830-002amsd SampType: MSD4 TestCode: EPA Method 8260B: Volatiles Short List

Client ID: SC-31 Batch ID: **B54152** RunNo: 54152

Prep Date:	Analysis Da	ate: 9/	14/2018	S	eqNo: 1	791515	Units: mg/K	g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.39		0.3566		109	70	130	0	0	
Surr: Toluene-d8	0.33		0.3566		92.9	70	130	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

Reporting Detection Limit RL

Sample container temperature is out of limit as specified

Page 7 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809830

18-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 2.5ug gro Ics SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: LCSS Batch ID: **A54152** RunNo: 54152 Prep Date: Analysis Date: 9/14/2018 SeqNo: 1790345 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 26 O 5.0 25.00 104 70 130 Surr: BFB 450 500.0 89.3 70 130 Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: PBS Batch ID: A54152 RunNo: 54152 Analysis Date: 9/14/2018 Prep Date: SeqNo: 1790346 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) ND 5.0 480 Surr: BFB 500.0 95.1 70 130

Sample ID 1809830-001ams SampType: MS TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-30 Batch ID: A54152 RunNo: 54152 Prep Date: Analysis Date: 9/14/2018 SeqNo: 1791512 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual Gasoline Range Organics (GRO) 20 4.0 20.14 97.7 64.7 142 Surr: BFB 380 402.9 95.3 70 130

Sample ID 1809830-001amsd SampType: MSD TestCode: EPA Method 8015D Mod: Gasoline Range Client ID: SC-30 Batch ID: A54152 RunNo: 54152 Analysis Date: 9/14/2018 Prep Date: SeqNo: 1791513 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 19 4.0 20.14 95.6 64.7 142 2.15 20 Surr: BFB 390 402.9 98.0 70 130 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

Page 8 of 8

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109

Albuquerque, NM 87109 Sample Log-In Check List TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.com RULE ENGINEERING LL Client Name: Work Order Number: 1809830 RcptNo: 1 anne Stran Received By: Anne Thorne 9/14/2018 7:00:00 AM anne Sham Completed By: Anne Thome 9/14/2018 7:19:10 AM JAB O9/14/18 Reviewed By: AT 09/14/18 No 🗌 Yes 🗹 Not Present 1. Is Chain of Custody complete? 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? Yes 🗹 NA 🗌 No 🗆 No 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗹 NA 🗆 5. Sample(s) in proper container(s)? Yes 🗹 No 🗌 Yes 🗹 No 🗌 6. Sufficient sample volume for indicated test(s)? 7. Are samples (except VOA and ONG) properly preserved? No 🗹 NA 🗆 8. Was preservative added to bottles? Yes No 🗆 No VOA Vials 🗹 9. VOA vials have zero headspace? Yes 🗌 No 🗹 10. Were any sample containers received broken? # of preserved bottles checked No 🗌 for pH: 11. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? No 🗀 12. Are matrices correctly identified on Chain of Custody? No 🗌 Yes 🗸 13. Is it clear what analyses were requested? Yes 🗸 No 🗌 Checked by: 14. Were all holding times able to be met? (If no, notify customer for authorization.) Special Handling (if applicable) NA 🗸 15. Was client notified of all discrepancies with this order? Yes No 🗆 Person Notified: Date By Whom: 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 Good Yes

1.2

Good

Yes

		www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	10	Analysis	(γ) (γ)	O / WIF	HTT + (1.81) (1.81) (1.10) (1.82) (1.10) (200,e) (2008)	(GH	BTEX + MTE BTEX + MTE TPH 8015B TPH (Methor PPH's (8310 RCRA 8 Met Anions (F,Cl 8081 Pesticit 8081 Pesticit 8081 Pesticit 8081 Pesticit 8081 Pesticit Anions (F,Cl 8081 Pesticit 8081 Pe	X	× × ×	XXX					Rem	65C Direct Bill to Hillcoxp	Jo Clara Cardoza	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.
Turn-Around Time:	□ Standard ★Rush SQ WVL Date	Project Name:	HEC Luerne #1			Project Manager:	Heally Woods	Sampler: Heathur Woods On Ice	Sample Temperature: 2 Cools	ا عَأَث ا	102 - mon State (1)	(1)400 Glass		1) 402 Glass — — — — — — — — — — — — — — — — — —				. Date Time	- S - -	Mine Dall+118	tracted to other accredited laboratories. This serves as notice of t
ord	Client: Rule Engineering LLC		Mailing Address: 501 Arroart Dr. Sk. スト		Phone #: (565) 7 16-2787	email or Fax#: \กุพธอปร(ชิงานายเหลากยุมาณการณา	QA/QC Package: \text{\alpha} \	n □ Other	□ EDD (Type)	x Sample Request ID	9/3/18 1440 Soil SC-30	Sil 5C-31	525 501 55-32	50:1 56-33				Relinquished by:	Date: Time: Relinquished by:	90	if necessary, samples submitted to Hall Environmental may be subco



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

September 28, 2018

Heather Woods Rule Engineering LLC 501 Airport Dr., Ste 205 Farmington, NM 87401

TEL: (505) 325-1055

FAX

RE: HEC Lucerne 1 OrderNo.: 1809F05

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 8 sample(s) on 9/26/2018 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-34

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 2:24:00 PM

 Lab ID:
 1809F05-001
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	GANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.4	mg/Kg	1	9/26/2018 11:06:06 AM	40586
Motor Oil Range Organics (MRO)	ND	47	mg/Kg	1	9/26/2018 11:06:06 AM	40586
Surr: DNOP	121	50.6-138	%Rec	1	9/26/2018 11:06:06 AM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	NSB
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	9/26/2018 9:36:18 AM	A54425
Surr: BFB	89.9	15-316	%Rec	5	9/26/2018 9:36:18 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	NSB
Benzene	ND	0.090	mg/Kg	5	9/26/2018 9:36:18 AM	C54425
Toluene	ND	0.18	mg/Kg	5	9/26/2018 9:36:18 AM	C54425
Ethylbenzene	ND	0.18	mg/Kg	5	9/26/2018 9:36:18 AM	C54425
Xylenes, Total	ND	0.36	mg/Kg	5	9/26/2018 9:36:18 AM	C54425
Surr: 4-Bromofluorobenzene	88.6	80-120	%Rec	5	9/26/2018 9:36:18 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 12
	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

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-35

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 1:32:00 PM

 Lab ID:
 1809F05-002
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE O	ORGANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	9/26/2018 11:30:42 AM	40586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/26/2018 11:30:42 AM	40586
Surr: DNOP	121	50.6-138	%Rec	1	9/26/2018 11:30:42 AM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	3.7	mg/Kg	1	9/26/2018 9:59:50 AM	A54425
Surr: BFB	90.1	15-316	%Rec	1	9/26/2018 9:59:50 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.018	mg/Kg	1	9/26/2018 9:59:50 AM	C54425
Toluene	ND	0.037	mg/Kg	1	9/26/2018 9:59:50 AM	C54425
Ethylbenzene	ND	0.037	mg/Kg	1	9/26/2018 9:59:50 AM	C54425
Xylenes, Total	ND	0.073	mg/Kg	1	9/26/2018 9:59:50 AM	C54425
Surr: 4-Bromofluorobenzene	89.9	80-120	%Rec	1	9/26/2018 9:59:50 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 12
	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

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-36

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 2:02:00 PM

 Lab ID:
 1809F05-003
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE O	RGANICS				Analyst	:: Irm
Diesel Range Organics (DRO)	ND	9.3	mg/Kg	1	9/26/2018 11:55:08 AM	40586
Motor Oil Range Organics (MRO)	ND	46	mg/Kg	1	9/26/2018 11:55:08 AM	40586
Surr: DNOP	119	50.6-138	%Rec	1	9/26/2018 11:55:08 AM	l 40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	3.8	mg/Kg	1	9/26/2018 10:23:21 AM	A54425
Surr: BFB	93.8	15-316	%Rec	1	9/26/2018 10:23:21 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	:: NSB
Benzene	ND	0.019	mg/Kg	1	9/26/2018 10:23:21 AM	C54425
Toluene	ND	0.038	mg/Kg	1	9/26/2018 10:23:21 AM	C54425
Ethylbenzene	ND	0.038	mg/Kg	1	9/26/2018 10:23:21 AM	C54425
Xylenes, Total	ND	0.075	mg/Kg	1	9/26/2018 10:23:21 AM	C54425
Surr: 4-Bromofluorobenzene	91.8	80-120	%Rec	1	9/26/2018 10:23:21 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 12
	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

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-37

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 2:15:00 PM

 Lab ID:
 1809F05-004
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.7	mg/Kg	1	9/26/2018 12:19:43 PM	40586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/26/2018 12:19:43 PM	40586
Surr: DNOP	119	50.6-138	%Rec	1	9/26/2018 12:19:43 PM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	3.9	mg/Kg	1	9/26/2018 10:46:54 AM	A54425
Surr: BFB	90.3	15-316	%Rec	1	9/26/2018 10:46:54 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.019	mg/Kg	1	9/26/2018 10:46:54 AM	C54425
Toluene	ND	0.039	mg/Kg	1	9/26/2018 10:46:54 AM	C54425
Ethylbenzene	ND	0.039	mg/Kg	1	9/26/2018 10:46:54 AM	C54425
Xylenes, Total	ND	0.078	mg/Kg	1	9/26/2018 10:46:54 AM	C54425
Surr: 4-Bromofluorobenzene	90.4	80-120	%Rec	1	9/26/2018 10:46:54 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 12
	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

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-38

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 1:39:00 PM

 Lab ID:
 1809F05-005
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	170	9.7	mg/Kg	1	9/26/2018 12:44:09 PM	40586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/26/2018 12:44:09 PM	40586
Surr: DNOP	124	50.6-138	%Rec	1	9/26/2018 12:44:09 PM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	26	20	mg/Kg	5	9/26/2018 11:10:25 AM	A54425
Surr: BFB	136	15-316	%Rec	5	9/26/2018 11:10:25 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.099	mg/Kg	5	9/26/2018 11:10:25 AM	C54425
Toluene	ND	0.20	mg/Kg	5	9/26/2018 11:10:25 AM	C54425
Ethylbenzene	ND	0.20	mg/Kg	5	9/26/2018 11:10:25 AM	C54425
Xylenes, Total	1.3	0.40	mg/Kg	5	9/26/2018 11:10:25 AM	C54425
Surr: 4-Bromofluorobenzene	93.1	80-120	%Rec	5	9/26/2018 11:10:25 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 12
	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, Inc.

Date Reported: 9/28/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-39

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 1:46:00 PM

 Lab ID:
 1809F05-006
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE O	ORGANICS				Analyst	:: Irm
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	9/26/2018 1:08:40 PM	40586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/26/2018 1:08:40 PM	40586
Surr: DNOP	106	50.6-138	%Rec	1	9/26/2018 1:08:40 PM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.6	mg/Kg	1	9/26/2018 11:57:25 AM	A54425
Surr: BFB	91.2	15-316	%Rec	1	9/26/2018 11:57:25 AM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.023	mg/Kg	1	9/26/2018 11:57:25 AM	C54425
Toluene	ND	0.046	mg/Kg	1	9/26/2018 11:57:25 AM	C54425
Ethylbenzene	ND	0.046	mg/Kg	1	9/26/2018 11:57:25 AM	C54425
Xylenes, Total	ND	0.093	mg/Kg	1	9/26/2018 11:57:25 AM	C54425
Surr: 4-Bromofluorobenzene	88.4	80-120	%Rec	1	9/26/2018 11:57:25 AM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 12
	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

Date Reported: 9/28/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-40

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 1:52:00 PM

 Lab ID:
 1809F05-007
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR	RGANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	9/26/2018 1:33:00 PM	40586
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	9/26/2018 1:33:00 PM	40586
Surr: DNOP	95.3	50.6-138	%Rec	1	9/26/2018 1:33:00 PM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1	9/26/2018 12:20:47 PM	A54425
Surr: BFB	99.1	15-316	%Rec	1	9/26/2018 12:20:47 PM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	0.026	0.021	mg/Kg	1	9/26/2018 12:20:47 PM	C54425
Toluene	ND	0.042	mg/Kg	1	9/26/2018 12:20:47 PM	C54425
Ethylbenzene	ND	0.042	mg/Kg	1	9/26/2018 12:20:47 PM	C54425
Xylenes, Total	0.13	0.083	mg/Kg	1	9/26/2018 12:20:47 PM	C54425
Surr: 4-Bromofluorobenzene	92.7	80-120	%Rec	1	9/26/2018 12:20:47 PM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 12
	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, Inc.

Date Reported: 9/28/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-41

 Project:
 HEC Lucerne 1
 Collection Date: 9/25/2018 2:31:00 PM

 Lab ID:
 1809F05-008
 Matrix: SOIL
 Received Date: 9/26/2018 7:00:00 AM

Analyses	Result	PQL (Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	10	mg/Kg	1	9/26/2018 1:57:27 PM	40586
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	9/26/2018 1:57:27 PM	40586
Surr: DNOP	103	50.6-138	%Rec	1	9/26/2018 1:57:27 PM	40586
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.1	mg/Kg	1	9/26/2018 12:44:08 PM	A54425
Surr: BFB	91.5	15-316	%Rec	1	9/26/2018 12:44:08 PM	A54425
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.020	mg/Kg	1	9/26/2018 12:44:08 PM	C54425
Toluene	ND	0.041	mg/Kg	1	9/26/2018 12:44:08 PM	C54425
Ethylbenzene	ND	0.041	mg/Kg	1	9/26/2018 12:44:08 PM	C54425
Xylenes, Total	ND	0.081	mg/Kg	1	9/26/2018 12:44:08 PM	C54425
Surr: 4-Bromofluorobenzene	90.0	80-120	%Rec	1	9/26/2018 12:44:08 PM	C54425

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 12
	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, Inc.

WO#: 1809F05

28-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Tioject.		
Sample ID MB-40586	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 40586	RunNo: 54424
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1803489 Units: mg/Kg
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	ND 10	
Motor Oil Range Organics (MRO)		
Surr: DNOP	11 10.00	110 50.6 138
Sample ID LCS-40586	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 40586	RunNo: 54424
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1803490 Units: mg/Kg
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	54 10 50.00	0 0 109 70 130
Surr: DNOP	5.7 5.000) 113 50.6 138
Sample ID 1809F05-008A	MS SampType: MS	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: SC-41	Batch ID: 40586	RunNo: 54424
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1805096 Units: mg/Kg
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	47 9.6 48.08	3 0 97.0 53.5 126
Surr: DNOP	4.9 4.808	3 101 50.6 138
Sample ID 1809F05-008A	MSD SampType: MSD	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: SC-41	Batch ID: 40586	RunNo: 54424
Prep Date: 9/26/2018	Analysis Date: 9/26/2018	SeqNo: 1805097 Units: mg/Kg
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Diesel Range Organics (DRO)	48 9.9 49.65	5 0 96.6 53.5 126 2.82 21.7
Surr: DNOP	5.0 4.965	5 101 50.6 138 0 0
Sample ID LCS-40568	SampType: LCS	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: LCSS	Batch ID: 40568	RunNo: 54424
Prep Date: 9/25/2018	Analysis Date: 9/26/2018	SeqNo: 1805098 Units: %Rec
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual
Surr: DNOP	5.1 5.000	0 101 50.6 138
Sample ID MB-40568	SampType: MBLK	TestCode: EPA Method 8015M/D: Diesel Range Organics
Client ID: PBS	Batch ID: 40568	RunNo: 54424
Prep Date: 9/25/2018	Analysis Date: 9/26/2018	SeqNo: 1805099 Units: %Rec
Analyte	Result PQL SPK value	e SPK Ref Val %REC LowLimit HighLimit %RPD RPDLimit Qual

Qualifiers:

Value exceeds Maximum Contaminant Level.

Sample Diluted Due to Matrix D

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

PQL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

E Value above quantitation range

J Analyte detected below quantitation limits

Page 9 of 12

P Sample pH Not In Range

RL Reporting Detection Limit

Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809F05**

28-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID MB-40568 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: **PBS** Batch ID: **40568** RunNo: **54424**

Prep Date: 9/25/2018 Analysis Date: 9/26/2018 SeqNo: 1805099 Units: %Rec

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

Surr: DNOP 11 10.00 106 50.6 138

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 Detection Limit

W Sample container temperature is out of limit as specified

Page 10 of 12

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809F05**

28-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: A54425 RunNo: 54425

Prep Date: Analysis Date: 9/26/2018 SeqNo: 1804180 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 950 1000 94.9 15 316

Sample ID 2.5UG GRO LCS SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: A54425 RunNo: 54425

Prep Date: Analysis Date: 9/26/2018 SeqNo: 1804181 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
 113
 75.9
 131

 Surr: BFB
 1100
 1000
 109
 15
 316

Sample ID 1809F05-001AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-34 Batch ID: A54425 RunNo: 54425

Prep Date: Analysis Date: 9/26/2018 SeqNo: 1804182 Units: mg/Kg

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

 Gasoline Range Organics (GRO)
 91
 18
 90.06
 0
 101
 77.8
 128

 Surr: BFB
 3800
 3602
 106
 15
 316

Sample ID 1809F05-001AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-34 Batch ID: A54425 RunNo: 54425

Prep Date: Analysis Date: 9/26/2018 SeqNo: 1804183 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 91 18 90.06 101 77.8 128 0.119 20 Λ Surr: BFB 3800 3602 106 15 316 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

Page 11 of 12

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1809F05

28-Sep-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: C54425 RunNo: 54425

Prep Date: Analysis Date: 9/26/2018 SeqNo: 1804203 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

0.025 Benzene ND Toluene ND 0.050 Ethylbenzene ND 0.050 Xylenes, Total ND 0.10

Surr: 4-Bromofluorobenzene 0.94 1.000 94.1 80 120

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: C54425 RunNo: 54425

Prep Date:	Analysis [Date: 9/	26/2018	S	SeqNo: 1	804204	Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.3	77.3	128			
Toluene	0.96	0.050	1.000	0	96.2	79.2	125			
Ethylbenzene	0.95	0.050	1.000	0	94.6	80.7	127			
Xylenes, Total	2.8	0.10	3.000	0	94.5	81.6	129			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

Sample ID 1809F05-002AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SC-35 Batch ID: C54425 RunNo: 54425

Prep Date:	Analysis [Date: 9/	26/2018	S	SeqNo: 1	804205	Units: mg/K	ίg		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.70	0.018	0.7305	0.01585	94.3	68.5	133			
Toluene	0.73	0.037	0.7305	0.01235	98.1	75	130			
Ethylbenzene	0.70	0.037	0.7305	0.008547	94.7	79.4	128			
Xylenes, Total	2.1	0.073	2.192	0.03119	95.1	77.3	131			
Surr: 4-Bromofluorobenzene	0.69		0.7305		94.8	80	120			

Sample ID 1809F05-002AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SC-35 Batch ID: C54425 RunNo: 54425

Ciletit ID. 3C-33	Dato	111D. C 3	4423	r	turino. 3	4423				
Prep Date:	Analysis Date: 9/26/2018		8	SeqNo: 1	804206	Units: mg/k	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.69	0.018	0.7305	0.01585	91.7	68.5	133	2.79	20	
Toluene	0.71	0.037	0.7305	0.01235	94.9	75	130	3.26	20	
Ethylbenzene	0.69	0.037	0.7305	0.008547	92.7	79.4	128	2.12	20	
Xylenes, Total	2.1	0.073	2.192	0.03119	92.7 77.3		131	2.58	20	
Surr: 4-Bromofluorobenzene	0.67		0.7305		92.0	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 12 of 12



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: 1809F05 RcotNo: 1 an Il-Received By: Anne Thorne 9/26/2018 7:00:00 AM an Il-Completed By: Anne Thorne 9/26/2018 7:14:31 AM 9/26/18 Reviewed By: Labeled by! A 09/26/17 Chain of Custody No 🗌 Not Present Yes 🗸 1. Is Chain of Custody complete? 2. How was the sample delivered? Courier Log In 3. Was an attempt made to cool the samples? Yes 🗸 No 🗍 NA 🗌 No 🗌 4. Were all samples received at a temperature of >0° C to 6.0°C NA 🗌 Yes 🗹 Sample(s) in proper container(s)? Yes 🗸 No 🗀 No \square Sufficient sample volume for indicated test(s)? Yes 🗸 7. Are samples (except VOA and ONG) properly preserved? ~ No Yes Yes No 🔽 NA 🔲 8. Was preservative added to bottles? Yes No 🔲 No VOA Vials 9. VOA vials have zero headspace? No 🗹 10. Were any sample containers received broken? # of preserved bottles checked No 🗌 11. Does paperwork match bottle labels? Yes 🔽 for pH: (Note discrepancies on chain of custody) (<2 or >12 unless noted) Adjusted? Yes 🔽 No 12. Are matrices correctly identified on Chain of Custody? Yes 🗸 No 🗔 13 Is it clear what analyses were requested? Checked by: 14. Were all holding times able to be met? Yes 🔽 No (If no, notify customer for authorization.) 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 ℃ Condition Seal Intact | Seal No Seal Date Signed By 1.1 Good Yes

/ Record	Time			—	HALL	EN.	ENVIRONMENT	NO	Σ	NTA	}
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Mailing Address: SOI Award Dr., SA 205	income	H I	490	4901 Hawkins NE	ns NE	Albuq	Albuquerque, NM 87109	NM 8	(7109		
to (Project #:		Tel	Tel. 505-345-3975	5-3975	Fax	505-3	505-345-4107	27		
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If necessary, samples submitted to Ha	htracted to other accredited laborat	ories. This serves as notice of this	possibility. Ar	y sub-cont	racted data	will be cle	arly notate	d on the	analytical	report.	



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

October 02, 2018

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

FAX

RE: HEC Lucerne 1 OrderNo.: 1809G88

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 9/28/2018 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

andel

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 10/2/2018

CLIENT: Rule Engineering LLC **Client Sample ID:** SC-38R

 Project:
 HEC Lucerne 1
 Collection Date: 9/27/2018 1:45:00 PM

 Lab ID:
 1809G88-001
 Matrix: MEOH (SOIL)
 Received Date: 9/28/2018 8:40:00 AM

Analyses	Result	PQL	Qual Unit	s DI	F Date Analyzed	Batch
EPA METHOD 8015D MOD: GASOLINE RANGE					Analyst	: AG
Gasoline Range Organics (GRO)	23	21	mg/k	g 5	9/28/2018 2:53:11 PM	A54515
Surr: BFB	90.3	70-130	%Re	5	9/28/2018 2:53:11 PM	A54515
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst	: Irm
Diesel Range Organics (DRO)	54	9.9	mg/k	g 1	9/28/2018 10:26:13 AM	40652
Motor Oil Range Organics (MRO)	ND	50	mg/k	g 1	9/28/2018 10:26:13 AM	40652
Surr: DNOP	104	50.6-138	%Re	c 1	9/28/2018 10:26:13 AM	40652
EPA METHOD 8260B: VOLATILES SHORT LIST					Analyst	: AG
Benzene	ND	0.10	mg/k	g 5	9/28/2018 2:53:11 PM	B54515
Toluene	ND	0.21	mg/k	g 5	9/28/2018 2:53:11 PM	B54515
Ethylbenzene	ND	0.21	mg/k	g 5	9/28/2018 2:53:11 PM	B54515
Xylenes, Total	0.52	0.41	mg/k	g 5	9/28/2018 2:53:11 PM	B54515
Surr: 4-Bromofluorobenzene	102	70-130	%Re	c 5	9/28/2018 2:53:11 PM	B54515
Surr: Toluene-d8	95.6	70-130	%Re	c 5	9/28/2018 2:53:11 PM	B54515

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank		
	D	Sample Diluted Due to Matrix	pple Diluted Due to Matrix E Value above quantitation range			
	H Holding times for preparation or analysis exceededND Not Detected at the Reporting Limit		J	Analyte detected below quantitation limits Page 1 of 4		
			P	Sample pH Not In Range		
PQL Practical Quanitative Limit				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.

WO#: 1809G88

02-Oct-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 1809G88-001AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: **SC-38R** Batch ID: **40652** RunNo: **54488**

Prep Date: 9/28/2018 Analysis Date: 9/28/2018 SeqNo: 1807199 Units: mg/Kg

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

Diesel Range Organics (DRO) 120 10 50.00 54.45 123 53.5 126

 Diesel Range Organics (DRO)
 120
 10
 50.00
 54.45
 123
 53.5
 126

 Surr: DNOP
 4.7
 5.000
 94.9
 50.6
 138

Sample ID 1809G88-001AMSD SampType: MSD TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: SC-38R Batch ID: 40652 RunNo: 54488

Prep Date: 9/28/2018 Analysis Date: 9/28/2018 SeqNo: 1807200 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 110 9.8 48.83 54.45 118 53.5 126 3.55 21.7 Surr: DNOP 4.883 101 50.6 0 4.9 138 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 2 of 4

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809G88**

02-Oct-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 100ng btex Ics	SampT	SampType: LCS4 TestCode: EPA Method 8260B: Volatiles Short List								
Client ID: BatchQC	Batcl	Batch ID: B54515 RunNo: 54515								
Prep Date:	Analysis D	Date: 9/28/2018 SeqNo: 1807139			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	107	80	120			
Ethylbenzene	1.0	0.050	1.000	0	105	80	120			
Xylenes, Total	3.2	0.10	3.000	0	106	80	120			
Surr: 4-Bromofluorobenzene	0.44		0.5000		88.2	70	130			
Surr: Toluene-d8	0.49		0.5000		98.8	70	130			

Sample ID rb	SampT	уре: МЕ	BLK	Tes	tCode: E	PA Method	8260B: Volat	iles Short	List	
Client ID: PBS	Batch	n ID: B5	4515	F	RunNo: 5	4515				
Prep Date:	Analysis D	oate: 9/	28/2018	5	SeqNo: 1	807148	Units: mg/K	(g		
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	0.48		0.5000		95.0	70	130			
Surr: Toluene-d8	0.48		0.5000		96.4	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 Detection Limit

W Sample container temperature is out of limit as specified

Page 3 of 4

Hall Environmental Analysis Laboratory, Inc.

WO#: **1809G88**

02-Oct-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 2.5ug gro Ics SampType: LCS TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: LCSS Batch ID: A54515 RunNo: 54515

Prep Date: Analysis Date: 9/28/2018 SeqNo: 1807134 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
 88.2
 70
 130

 Surr: BFB
 370
 500.0
 74.0
 70
 130

Sample ID rb SampType: MBLK TestCode: EPA Method 8015D Mod: Gasoline Range

Client ID: PBS Batch ID: A54515 RunNo: 54515

Prep Date: Analysis Date: 9/28/2018 SeqNo: 1807135 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 420 500.0 84.8 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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 4 of 4



11un Environmeniai Analysis Laborator) 4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-410;

Website: www.hallenvironmental.con

Sample Log-In Check List

Client Name:	RULE ENGINEERING LL	Work Order N	umber: 18 6	9G88		RcptN	o: 1
Received By:	Anne Thorne	9/28/2018 8:40:0	00 AM		an S	N.	
Completed By:	Ashley Gallegos	9/28/2018 9:06:0	00 AM		A		
Reviewed By:	ENM	9/28/18	· · · · ·	(a	beie0	1 64'_	50 9-28-1
Chain of Cus	tody						
	ustody complete?		Yes		No 🗆	Not Present	
2. How was the	sample delivered?		<u>Co</u>			THOU TOUGHT [2]	
<u>Log In</u>							
3. Was an attern	pt made to cool the samples	?	Yes	V	No 🗆	NA 🗌	
4. Were all samp	oles received at a temperatur	e of >0° C to 6.0°C	Yes	V	No 🗆	NA 🗆	
5. Sample(s) in p	proper container(s)?		Yes	V	No 🗌		
6. Sufficient sam	ple volume for indicated test(s)?	Yes	~	No 🗌		
	except VOA and ONG) prope		Yes	✓	No 🗆		
	ive added to bottles?	,,	Yes		No 🗹	NA 🗆	
9. VOA vials have	e zero headspace?		Yes		No 🗆	No VOA Vials 🗹	
10. Were any sam	ple containers received brok	en?	Yes		No 🗹		
11 Dans						# of preserved bottles checked	
(Note discrepar	k match bottle labels? ncies on chain of custody)		Yes	✓	No 🗌	for pH:	12
	prrectly identified on Chain of	Custody?	Yes	$ \checkmark $	No 🗌	Adjusted?	>12 unless noted)
	analyses were requested?	-		✓	No 🗆		
14. Were all holding (If no, notify cus	g times able to be met? stomer for authorization.)		Yes	V	No 🗌	Checked by:	9.28.14
	ng (if applicable)					/	
	fied of all discrepancies with	this order?	Yes		No 🗀	NA 🗹	
Person N	lotified:	Date	e	P. Walter and H.			
By Whon	n:	Via:	9	il [7	Phone Fax	☐ In Person	
Regardin	g:				· ·······		
Client Ins	tructions:		CONTRACTOR OF THE PARTY OF THE	4241N(V)()(244N(V))		WE COMPANY OF THE PARTY OF THE	
16. Additional rem	arks:	1 100 111 111 111			N. S. S. Contract of the Contract Special Physics	and a minimal and a second and a	
17. Cooler Inform Cooler No	CONTRACTOR CONTRACTOR OF PROPERTY COMPANIES AND ASSESSMENT OF THE CONTRACTOR OF THE	eal Intact Seal No s	Seal Da	te :	Signed By		



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

November 02, 2018

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

FAX

RE: HEC Lucerne 1 OrderNo.: 1811004

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 14 sample(s) on 11/1/2018 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

and st

4901 Hawkins NE

Albuquerque, NM 87109



Date Reported: 11/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-38

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:18:00 AM

 Lab ID:
 1811004-001
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	130	9.9		mg/Kg	1	11/1/2018 11:20:10 AM	41308
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/1/2018 11:20:10 AM	41308
Surr: DNOP	95.4	50.6-138		%Rec	1	11/1/2018 11:20:10 AM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	NSB
Gasoline Range Organics (GRO)	99	22		mg/Kg	5	11/1/2018 9:00:35 AM	G55335
Surr: BFB	299	73.8-119	S	%Rec	5	11/1/2018 9:00:35 AM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	0.11		mg/Kg	5	11/1/2018 9:00:35 AM	B55335
Toluene	ND	0.22		mg/Kg	5	11/1/2018 9:00:35 AM	B55335
Ethylbenzene	0.39	0.22		mg/Kg	5	11/1/2018 9:00:35 AM	B55335
Xylenes, Total	0.89	0.44		mg/Kg	5	11/1/2018 9:00:35 AM	B55335
Surr: 4-Bromofluorobenzene	99.8	80-120		%Rec	5	11/1/2018 9:00:35 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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 exceededND Not Detected at the Reporting Limit		J	Analyte detected below quantitation limits Page 1 of 19
			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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-39

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:24:00 AM

 Lab ID:
 1811004-002
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	11/1/2018 11:44:27 AM	41308
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/1/2018 11:44:27 AM	41308
Surr: DNOP	98.9	50.6-138	%Rec	1	11/1/2018 11:44:27 AM	41308
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1	11/1/2018 9:23:20 AM	G55335
Surr: BFB	108	73.8-119	%Rec	1	11/1/2018 9:23:20 AM	G55335
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.021	mg/Kg	1	11/1/2018 9:23:20 AM	B55335
Toluene	ND	0.042	mg/Kg	1	11/1/2018 9:23:20 AM	B55335
Ethylbenzene	ND	0.042	mg/Kg	1	11/1/2018 9:23:20 AM	B55335
Xylenes, Total	ND	0.085	mg/Kg	1	11/1/2018 9:23:20 AM	B55335
Surr: 4-Bromofluorobenzene	94.3	80-120	%Rec	1	11/1/2018 9:23:20 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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			Analyte detected below quantitation limits Page 2 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-40

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:33:00 AM

 Lab ID:
 1811004-003
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	11/1/2018 12:08:40 PM	41308
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/1/2018 12:08:40 PM	41308
Surr: DNOP	101	50.6-138		%Rec	1	11/1/2018 12:08:40 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	11/1/2018 9:46:05 AM	G55335
Surr: BFB	119	73.8-119	S	%Rec	1	11/1/2018 9:46:05 AM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.020		mg/Kg	1	11/1/2018 9:46:05 AM	B55335
Toluene	ND	0.040		mg/Kg	1	11/1/2018 9:46:05 AM	B55335
Ethylbenzene	ND	0.040		mg/Kg	1	11/1/2018 9:46:05 AM	B55335
Xylenes, Total	ND	0.081		mg/Kg	1	11/1/2018 9:46:05 AM	B55335
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	11/1/2018 9:46:05 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-41

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:44:00 AM

 Lab ID:
 1811004-004
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	75	9.8		mg/Kg	1	11/1/2018 12:32:58 PM	41308
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/1/2018 12:32:58 PM	41308
Surr: DNOP	103	50.6-138		%Rec	1	11/1/2018 12:32:58 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	ND	20		mg/Kg	5	11/1/2018 10:08:48 AM	G55335
Surr: BFB	125	73.8-119	S	%Rec	5	11/1/2018 10:08:48 AM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.098		mg/Kg	5	11/1/2018 10:08:48 AM	B55335
Toluene	ND	0.20		mg/Kg	5	11/1/2018 10:08:48 AM	B55335
Ethylbenzene	ND	0.20		mg/Kg	5	11/1/2018 10:08:48 AM	B55335
Xylenes, Total	ND	0.39		mg/Kg	5	11/1/2018 10:08:48 AM	B55335
Surr: 4-Bromofluorobenzene	95.5	80-120		%Rec	5	11/1/2018 10:08:48 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	Е	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-42

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:50:00 AM

 Lab ID:
 1811004-005
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	65	10	mg/Kg	1	11/1/2018 12:57:13 PM	41308
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	11/1/2018 12:57:13 PM	41308
Surr: DNOP	107	50.6-138	%Rec	1	11/1/2018 12:57:13 PM	41308
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	11/1/2018 10:31:35 AM	G55335
Surr: BFB	118	73.8-119	%Rec	5	11/1/2018 10:31:35 AM	G55335
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.10	mg/Kg	5	11/1/2018 10:31:35 AM	B55335
Toluene	ND	0.20	mg/Kg	5	11/1/2018 10:31:35 AM	B55335
Ethylbenzene	ND	0.20	mg/Kg	5	11/1/2018 10:31:35 AM	B55335
Xylenes, Total	ND	0.40	mg/Kg	5	11/1/2018 10:31:35 AM	B55335
Surr: 4-Bromofluorobenzene	95.0	80-120	%Rec	5	11/1/2018 10:31:35 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	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 Page 5 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-43

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 10:59:00 AM

 Lab ID:
 1811004-006
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	11/1/2018 1:45:54 PM	41308
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/1/2018 1:45:54 PM	41308
Surr: DNOP	104	50.6-138	%Rec	1	11/1/2018 1:45:54 PM	41308
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.2	mg/Kg	1	11/1/2018 10:54:21 AM	G55335
Surr: BFB	91.1	73.8-119	%Rec	1	11/1/2018 10:54:21 AM	G55335
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.021	mg/Kg	1	11/1/2018 10:54:21 AM	B55335
Toluene	ND	0.042	mg/Kg	1	11/1/2018 10:54:21 AM	B55335
Ethylbenzene	ND	0.042	mg/Kg	1	11/1/2018 10:54:21 AM	B55335
Xylenes, Total	ND	0.084	mg/Kg	1	11/1/2018 10:54:21 AM	B55335
Surr: 4-Bromofluorobenzene	91.1	80-120	%Rec	1	11/1/2018 10:54:21 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 6 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-44

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:08:00 AM

 Lab ID:
 1811004-007
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	310	9.9		mg/Kg	1	11/1/2018 2:10:26 PM	41308
Motor Oil Range Organics (MRO)	68	50		mg/Kg	1	11/1/2018 2:10:26 PM	41308
Surr: DNOP	110	50.6-138		%Rec	1	11/1/2018 2:10:26 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	NSB
Gasoline Range Organics (GRO)	38	20		mg/Kg	5	11/1/2018 11:16:58 AM	G55335
Surr: BFB	165	73.8-119	S	%Rec	5	11/1/2018 11:16:58 AM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	NSB
Benzene	ND	0.10		mg/Kg	5	11/1/2018 11:16:58 AM	B55335
Toluene	ND	0.20		mg/Kg	5	11/1/2018 11:16:58 AM	B55335
Ethylbenzene	ND	0.20		mg/Kg	5	11/1/2018 11:16:58 AM	B55335
Xylenes, Total	1.1	0.41		mg/Kg	5	11/1/2018 11:16:58 AM	B55335
Surr: 4-Bromofluorobenzene	97.3	80-120		%Rec	5	11/1/2018 11:16:58 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 7 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-45

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:14:00 AM

 Lab ID:
 1811004-008
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	51	9.7		mg/Kg	1	11/1/2018 2:34:44 PM	41308
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/1/2018 2:34:44 PM	41308
Surr: DNOP	103	50.6-138		%Rec	1	11/1/2018 2:34:44 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	29	21		mg/Kg	5	11/1/2018 11:39:30 AM	G55335
Surr: BFB	135	73.8-119	S	%Rec	5	11/1/2018 11:39:30 AM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.11		mg/Kg	5	11/1/2018 11:39:30 AM	B55335
Toluene	0.25	0.21		mg/Kg	5	11/1/2018 11:39:30 AM	B55335
Ethylbenzene	ND	0.21		mg/Kg	5	11/1/2018 11:39:30 AM	B55335
Xylenes, Total	1.7	0.43		mg/Kg	5	11/1/2018 11:39:30 AM	B55335
Surr: 4-Bromofluorobenzene	93.8	80-120		%Rec	5	11/1/2018 11:39:30 AM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 8 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-46

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:21:00 AM

 Lab ID:
 1811004-009
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst	: Irm
Diesel Range Organics (DRO)	12	9.7	mg/Kg	1	11/1/2018 1:37:27 PM	41308
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/1/2018 1:37:27 PM	41308
Surr: DNOP	97.3	50.6-138	%Rec	1	11/1/2018 1:37:27 PM	41308
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	22	mg/Kg	5	11/1/2018 12:02:09 PM	G55335
Surr: BFB	103	73.8-119	%Rec	5	11/1/2018 12:02:09 PM	G55335
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.11	mg/Kg	5	11/1/2018 12:02:09 PM	B55335
Toluene	ND	0.22	mg/Kg	5	11/1/2018 12:02:09 PM	B55335
Ethylbenzene	ND	0.22	mg/Kg	5	11/1/2018 12:02:09 PM	B55335
Xylenes, Total	ND	0.45	mg/Kg	5	11/1/2018 12:02:09 PM	B55335
Surr: 4-Bromofluorobenzene	97.2	80-120	%Rec	5	11/1/2018 12:02:09 PM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 9 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-47

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:31:00 AM

 Lab ID:
 1811004-010
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	120	9.9		mg/Kg	1	11/1/2018 1:59:31 PM	41308
Motor Oil Range Organics (MRO)	52	49		mg/Kg	1	11/1/2018 1:59:31 PM	41308
Surr: DNOP	102	50.6-138		%Rec	1	11/1/2018 1:59:31 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	110	21		mg/Kg	5	11/1/2018 12:24:44 PM	G55335
Surr: BFB	267	73.8-119	S	%Rec	5	11/1/2018 12:24:44 PM	G55335
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.10		mg/Kg	5	11/1/2018 12:24:44 PM	B55335
Toluene	0.54	0.21		mg/Kg	5	11/1/2018 12:24:44 PM	B55335
Ethylbenzene	0.60	0.21		mg/Kg	5	11/1/2018 12:24:44 PM	B55335
Xylenes, Total	6.0	0.41		mg/Kg	5	11/1/2018 12:24:44 PM	B55335
Surr: 4-Bromofluorobenzene	104	80-120		%Rec	5	11/1/2018 12:24:44 PM	B55335

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 10 of 19
	ND	Not Detected at the Reporting Limit		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, Inc. Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-48

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:41:00 AM

 Lab ID:
 1811004-011
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	150	9.6		mg/Kg	1	11/1/2018 2:21:48 PM	41308
Motor Oil Range Organics (MRO)	59	48		mg/Kg	1	11/1/2018 2:21:48 PM	41308
Surr: DNOP	105	50.6-138		%Rec	1	11/1/2018 2:21:48 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	58	21		mg/Kg	5	11/1/2018 9:31:10 AM	G55334
Surr: BFB	190	73.8-119	S	%Rec	5	11/1/2018 9:31:10 AM	G55334
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.11		mg/Kg	5	11/1/2018 9:31:10 AM	B55334
Toluene	ND	0.21		mg/Kg	5	11/1/2018 9:31:10 AM	B55334
Ethylbenzene	0.22	0.21		mg/Kg	5	11/1/2018 9:31:10 AM	B55334
Xylenes, Total	2.0	0.43		mg/Kg	5	11/1/2018 9:31:10 AM	B55334
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	5	11/1/2018 9:31:10 AM	B55334

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 11 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-49

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 11:57:00 AM

 Lab ID:
 1811004-012
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG				Analyst	: JME	
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	11/1/2018 1:15:54 PM	41308
Motor Oil Range Organics (MRO)	ND	50	mg/Kg	1	11/1/2018 1:15:54 PM	41308
Surr: DNOP	99.3	50.6-138	%Rec	1	11/1/2018 1:15:54 PM	41308
EPA METHOD 8015D: GASOLINE RANGE					Analyst	: NSB
Gasoline Range Organics (GRO)	ND	4.3	mg/Kg	1	11/1/2018 9:54:42 AM	G55334
Surr: BFB	103	73.8-119	%Rec	1	11/1/2018 9:54:42 AM	G55334
EPA METHOD 8021B: VOLATILES					Analyst	: NSB
Benzene	ND	0.021	mg/Kg	1	11/1/2018 9:54:42 AM	B55334
Toluene	ND	0.043	mg/Kg	1	11/1/2018 9:54:42 AM	B55334
Ethylbenzene	ND	0.043	mg/Kg	1	11/1/2018 9:54:42 AM	B55334
Xylenes, Total	ND	0.085	mg/Kg	1	11/1/2018 9:54:42 AM	B55334
Surr: 4-Bromofluorobenzene	89.1	80-120	%Rec	1	11/1/2018 9:54:42 AM	B55334

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 12 of 19
	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, Inc.

Date Reported: 11/2/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-50

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 12:09:00 PM

 Lab ID:
 1811004-013
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	JME
Diesel Range Organics (DRO)	19	9.4		mg/Kg	1	11/1/2018 1:39:52 PM	41308
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/1/2018 1:39:52 PM	41308
Surr: DNOP	103	50.6-138		%Rec	1	11/1/2018 1:39:52 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	5.2	3.9		mg/Kg	1	11/1/2018 10:18:11 AM	G55334
Surr: BFB	154	73.8-119	S	%Rec	1	11/1/2018 10:18:11 AM	G55334
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	ND	0.020		mg/Kg	1	11/1/2018 10:18:11 AM	B55334
Toluene	ND	0.039		mg/Kg	1	11/1/2018 10:18:11 AM	B55334
Ethylbenzene	ND	0.039		mg/Kg	1	11/1/2018 10:18:11 AM	B55334
Xylenes, Total	ND	0.078		mg/Kg	1	11/1/2018 10:18:11 AM	B55334
Surr: 4-Bromofluorobenzene	91.6	80-120		%Rec	1	11/1/2018 10:18:11 AM	B55334

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limit Page 13 of 19
	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

Date Reported: 11/2/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-51

 Project:
 HEC Lucerne 1
 Collection Date: 10/31/2018 12:20:00 PM

 Lab ID:
 1811004-014
 Matrix: MEOH (SOIL)
 Received Date: 11/1/2018 8:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	JME
Diesel Range Organics (DRO)	110	9.6		mg/Kg	1	11/1/2018 2:03:55 PM	41308
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	11/1/2018 2:03:55 PM	41308
Surr: DNOP	103	50.6-138		%Rec	1	11/1/2018 2:03:55 PM	41308
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	400	18		mg/Kg	5	11/1/2018 10:41:36 AM	G55334
Surr: BFB	626	73.8-119	S	%Rec	5	11/1/2018 10:41:36 AM	G55334
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	0.59	0.089		mg/Kg	5	11/1/2018 10:41:36 AM	B55334
Toluene	3.1	0.18		mg/Kg	5	11/1/2018 10:41:36 AM	B55334
Ethylbenzene	2.4	0.18		mg/Kg	5	11/1/2018 10:41:36 AM	B55334
Xylenes, Total	26	0.35		mg/Kg	5	11/1/2018 10:41:36 AM	B55334
Surr: 4-Bromofluorobenzene	117	80-120		%Rec	5	11/1/2018 10:41:36 AM	B55334

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 14 of 19
	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, Inc.

WO#: **1811004**

02-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID LCS-41301 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 41301 RunNo: 55288

Prep Date: 10/31/2018 Analysis Date: 11/1/2018 SegNo: 1840909 Units: %Rec

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

Surr: DNOP 4.4 5.000 88.9 50.6 138

Sample ID MB-41301 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 41301 RunNo: 55288

Prep Date: 10/31/2018 Analysis Date: 11/1/2018 SeqNo: 1840910 Units: %Rec

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

Surr: DNOP 9.8 10.00 97.8 50.6 138

Sample ID LCS-41308 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: LCSS Batch ID: 41308 RunNo: 55332

Prep Date: 11/1/2018 Analysis Date: 11/1/2018 SeqNo: 1840996 Units: mg/Kg

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

 Diesel Range Organics (DRO)
 43
 10
 50.00
 0
 86.4
 70
 130

 Surr: DNOP
 4.6
 5.000
 92.6
 50.6
 138

Sample ID MB-41308 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 41308 RunNo: 55332

Prep Date: 11/1/2018 Analysis Date: 11/1/2018 SeqNo: 1840997 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 9.6 10.00 96.2 50.6 138

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

Reporting Detection Limit

J Analyte detected below quantitation limits

D C 1 HN / I D

P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

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Hall Environmental Analysis Laboratory, Inc.

WO#:

1811004 02-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: G55335 RunNo: 55335

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841156 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 910 1000 91.0 73.8 119

Sample ID 2.5UG GRO LCS SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: G55335 RunNo: 55335

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841157 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
 96.3
 80.1
 123

 Surr: BFB
 1000
 1000
 102
 73.8
 119

Sample ID 1811004-001AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: **SC-38** Batch ID: **G55335** RunNo: **55335**

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841158 Units: mg/Kg

RPDLimit %REC %RPD Analyte Result PQL SPK value SPK Ref Val LowLimit HighLimit Qual 98.85 Gasoline Range Organics (GRO) 210 22 111.0 104 77.8 128 Surr: BFB 14000 4440 310 S 73.8 119

Sample ID 1811004-001AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-38 Batch ID: G55335 RunNo: 55335

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841159 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 200 22 111.0 98.85 91.7 77.8 128 6.78 20 Surr: BFB 14000 4440 307 73.8 119 0 0 S

Sample ID B29 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: PBS Batch ID: G55334 RunNo: 55334

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841189 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
 87.1

 Surr: BFB
 870
 1000
 87.1
 73.8
 119

Sample ID 2.5UG GRO LCS SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: G55334 RunNo: 55334

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841190 Units: mg/Kg

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

Qualifiers:

* Value exceeds Maximum Contaminant Level. B

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

Page 16 of 19

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811004**

02-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID 2.5UG GRO LCS SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: G55334 RunNo: 55334

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841190 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 80.1 116 123 Surr: BFB 1100 1000 109 73.8 119

Sample ID 1811004-011AMS SampType: MS TestCode: EPA Method 8015D: Gasoline Range

Client ID: **SC-48** Batch ID: **G55334** RunNo: **55334**

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841191 Units: mg/Kg

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

 Gasoline Range Organics (GRO)
 190
 21
 106.3
 58.37
 125
 77.8
 128

 Surr: BFB
 8900
 4252
 208
 73.8
 119
 \$

Sample ID 1811004-011AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: **SC-48** Batch ID: **G55334** RunNo: **55334**

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841192 Units: mg/Kg

SPK value SPK Ref Val %REC HighLimit %RPD **RPDLimit** Qual Analyte Result **PQL** LowLimit Gasoline Range Organics (GRO) 170 106.3 58.37 108 77.8 128 9.89 20 Surr: BFB 8100 4252 190 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

D C 1 HN I D

Page 17 of 19

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811004

02-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: **B55335** RunNo: 55335

Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841173 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 95.0 80 120

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: **B55335** RunNo: 55335

Prep Date:	Date: Analysis Date: 11/1/2018			S	SeqNo: 1	841174	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	77.3	128			
Toluene	1.1	0.050	1.000	0	109	79.2	125			
Ethylbenzene	1.1	0.050	1.000	0	106	80.7	127			
Xylenes, Total	3.1	0.10	3.000	0	105	81.6	129			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.4	80	120			

Sample ID 1811004-002AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SC-39 Batch ID: **B55335** RunNo: 55335

Prep Date:	Analysis Date: 11/1/2018			SeqNo: 1841175			Units: mg/k	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.79	0.021	0.8453	0.003762	92.6	68.5	133			
Toluene	0.81	0.042	0.8453	0.002806	95.4	75	130			
Ethylbenzene	0.80	0.042	0.8453	0.007177	93.3	79.4	128			
Xylenes, Total	2.3	0.085	2.536	0.02323	91.2	77.3	131			
Surr: 4-Bromofluorobenzene	0.84		0.8453		99.2	80	120			

Sample ID 1811004-002AMSD TestCode: EPA Method 8021B: Volatiles SampType: MSD

Client ID: SC-39 Batch ID: **B55335** RunNo: 55335

Ciletit ID. 3C-39	Dato	11D. 63	5555	17	turiivo. 3	3333				
Prep Date:	Date: Analysis Date: 11/1/2018				SeqNo: 1	841176	(g			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.77	0.021	0.8453	0.003762	91.1	68.5	133	1.56	20	•
Toluene	0.79	0.042	0.8453	0.002806	93.5	75	130	1.93	20	
Ethylbenzene	0.77	0.042	0.8453	0.007177	90.8	79.4	128	2.72	20	
Xylenes, Total	2.3	0.085	2.536	0.02323	89.3	77.3	131	2.14	20	
Surr: 4-Bromofluorobenzene	0.81		0.8453		95.3	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 18 of 19

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811004**

02-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID B29 SampType: MBLK TestCode: EPA Method 8021B: Volatiles Client ID: **PBS** Batch ID: **B55334** RunNo: 55334 Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841205 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual ND 0.025

 Benzene
 ND
 0.025

 Toluene
 ND
 0.050

 Ethylbenzene
 ND
 0.050

 Xylenes, Total
 ND
 0.10

Surr: 4-Bromofluorobenzene 0.89 1.000 89.5 80 120

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles Batch ID: **B55334** Client ID: **LCSS** RunNo: 55334 Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841206 Units: mg/Kg Analyte **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Result Qual 0.025 1.000 O 87.6 77.3 128 Benzene 0.88 Toluene 0.94 0.050 1.000 0 94.3 79.2 125 Ethylbenzene 0.95 0.050 0 94.5 80.7 127 1.000 Xylenes, Total 2.9 0.10 3.000 0 96.0 81.6 129 90.8 Surr: 4-Bromofluorobenzene 0.91 1.000 80 120

Sample ID 1811004-012AMS SampType: MS TestCode: EPA Method 8021B: Volatiles SC-49 RunNo: 55334 Client ID: Batch ID: **B55334** Analysis Date: 11/1/2018 SeqNo: 1841208 Prep Date: Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Benzene 0.72 0.021 0.8540 0.01025 83.0 68.5 133 Toluene 0.78 0.043 0.8540 0.01127 90.2 75 130 90.7 0.79 0.043 0.8540 79.4 128 Ethylbenzene 0.01170 Xylenes, Total 2.4 0.085 2.562 0.03134 91.6 77.3 131

0.8540

0.78

Sample ID 1811004-012AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles Client ID: SC-49 Batch ID: **B55334** RunNo: 55334 Prep Date: Analysis Date: 11/1/2018 SeqNo: 1841209 Units: mg/Kg SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result **PQL** LowLimit HighLimit Qual 0.70 0.021 0.8540 0.01025 80.9 68.5 133 2.57 20 Benzene Toluene 0.77 0.043 0.8540 0.01127 88.6 75 130 1.73 20 Ethylbenzene 0.77 0.043 0.8540 0.01170 89.2 79.4 128 1.73 20 Xylenes, Total 2.3 0.085 2.562 0.03134 90.0 77.3 131 1.76 20 Surr: 4-Bromofluorobenzene 0.77 0.8540 89.6 80 120 0 0

Qualifiers:

* Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Surr: 4-Bromofluorobenzene

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

91.9

80

120

J Analyte detected below quantitation limits

P Sample pH Not In Range

RL Reporting Detection Limit

W Sample container temperature is out of limit as specified

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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 ENGINE	ERING LL	Work O	rder Numb	er: 181 1	1004			RcptNo	1
Received By:	Victoria Zellar	,	11/1/2018	8:30:00 A	M		Victor	ia Ge	lan	
Completed By:	Erin Melendre	,	11/1/2018	8:33:46 A	. R.#		Victor	(1 1	, 	
, ,			11/1/2010	0.00.40 /	m				7	
Reviewed By:	MAS MIN									
CR. DU		<u> </u>								
Chain of Cus						_		_		
1. Is Chain of C	ustody complete?				Yes	✓	No	Ш	Not Present	
2. How was the	sample delivered	?			Cour	<u>ier</u>				
<u>Log In</u>										
3. Was an attern	npt made to cool t	he samples?			Yes	✓	No		na 🗆	
4. Were all samp	oles received at a	temperature of	>0° C to	6.0°C	Yes	V	No		NA 🗆	
5 Sample/e) in	aranar aantaines/a				V		No			
o. Sample(s) in p	proper container(s	s) <i>t</i>			Yes	✓	NO			
6. Sufficient sam	ple volume for inc	dicated test(s)?			Yes	V	No			
7. Are samples (except VOA and 0	ONG) properly p	reserved	?	Yes	V	No			
8. Was preservat	tive added to bott	les?			Yes		No	✓	NA 🗌	
9. VOA vials hav	e zero headspace) ?			" Yes		No		No VOA Vials 🗹	
10, Were any san	nple containers re	ceived broken?			Yes		No	V		
								_	# of preserved bottles checked	
11. Does paperwo					Yes	Y	No		for pH:	
	ancies on chain of		Cubata		V	V	No	$_{\Box}$	Adjusted?	≯12 unless noted)
[2] Are matrices of [3] Is it clear what			Stody?			<u>v</u>	No			
14. Were all holdir							No		Charked by:	05
	ustomer for author				Yes	Y	NO		Citeored by O	81/1/11 AA
Special Handl										
15. Was client no			s order?		Yes		No		NA 🗹	
Person	Notified:			Date:]
By Who	om:			Via:) ∏eMa	il 🗀	Phone	Fax	☐ In Person	
Regardi	3		***************************************	- 10-1				, , , , ,		
	nstructions:				.,,		. 7 20			
16. Additional rer				******			* •			J
17. Cooler Infor						٠				
Cooler No		ondition Seal	Intact S	Seal No	Seal Da	ita I	Signed	RV	1	
1	4.4 God		************		Dugi Di	<u></u>				
2	4.7 God	· · · · · · · · · · · · · · · · · · ·			Vertical Contracts to the Assessment Contracts		······································	**************************************		
The community of an appealance (VII) is also all Anthre						-rancourem nakona	MIN'N WISHIN WANTED AND A COMMANDA		ı	

	HALL ENVIRONMENTAL ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis	3O)	S OI	Ga SIMS	(1.8 (1.8 (1.9 (1.4) (1.4) (1.4) (1.4)	100 MO3	BTI B (incorporation of the second of the se	BTEX + METEX + METEX + METEX + METEX + METE METE (METE METE) (METE) (MET	~	7	***	7	×	×	¥	× ×	***	×	×	9	Remarks: Direct Bill to Hilcor	,	Pag 1 of Z	his/serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.
Turn-Around Time:	☐ Standard Rush Same Day	Project Name:	HEC Luceme #1	Project #:		Project Manager:		Heather Woods	Sampler: Hather (Noods	Sample Temperature Street		Container Preservative HEAL No. Type and # Type $ S_1 $ $ S_2 $	(1) Hor Glus Nan -001	1 - 602	- - 003		-005	-006	-007	- 608	P00-	-010	-011	7 - 1012	Received by: Date Time	10 Coulter Date Ti	1014 11/4 00 1/4 11 11 11 8:30	er accredited laboratories.
Record	Client: Rule Engineering		Mailing Address: 501 Arroart Dr. Ste 205		Phone #: (505) 714 -2787	email or Fax#: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	QA/QC Package:		Accreditation S	(adv		Time Matrix Sample Request ID	1018 501 50-38	1024 1 SC-39	1091/10	1931/4 1044 SC-41	10/21/16 1050 SC-42		10/31/18 11:08 SC-44	10/3/18 1114 SC-45	10/31/16 1121 SC-410	19/3/8 1131 SC-47	10/31/18 1141 SC-4/B	1157 1 80-49	Relinquished by:	Time: Relinquished by:	10/31/15/1920 Phrodulybooless of	If necessary, samples submitted to Hall Environmental may be subcontracted to other

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Chain-of-Custody Record	Client: Rut Enginter ing		Arroad Dr. Sk 205	M 87401	2383	email or Fax#: hwoods@rullengineuring.Com	9	☐ Level 4 (Full Validation)		· ·		Sample Request ID	3C. 50	56-51					The state of the s	7年				d by: H. M. Woolls	motion Walk	If necessary, samples submitted to Hall Environmental may be subcontracted to oth
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Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87109 TEL: 505-345-3975 FAX: 505-345-4107 Website: www.hallenvironmental.com

November 12, 2018

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

FAX

RE: HEC Lucerne 1 OrderNo.: 1811502

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 11/9/2018 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

Indest

4901 Hawkins NE

Albuquerque, NM 87109

Analytical Report

Lab Order 1811502

Date Reported: 11/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC **Client Sample ID:** SC-38R

 Project:
 HEC Lucerne 1
 Collection Date: 11/8/2018 2:00:00 PM

 Lab ID:
 1811502-001
 Matrix: MEOH (SOIL)
 Received Date: 11/9/2018 8:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Ba	atch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	NICS				Analyst: Ir ı	m
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	11/9/2018 11:06:06 AM 41	1442
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/9/2018 11:06:06 AM 41	1442
Surr: DNOP	78.9	50.6-138	%Rec	1	11/9/2018 11:06:06 AM 41	1442
EPA METHOD 8015D: GASOLINE RANGE					Analyst: N	SB
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	11/9/2018 10:48:48 AM 41	1429
Surr: BFB	94.4	73.8-119	%Rec	5	11/9/2018 10:48:48 AM 41	1429
EPA METHOD 8021B: VOLATILES					Analyst: N	SB
Benzene	ND	0.092	mg/Kg	5	11/9/2018 10:48:48 AM 41	1429
Toluene	ND	0.18	mg/Kg	5	11/9/2018 10:48:48 AM 41	1429
Ethylbenzene	ND	0.18	mg/Kg	5	11/9/2018 10:48:48 AM 41	1429
Xylenes, Total	ND	0.37	mg/Kg	5	11/9/2018 10:48:48 AM 41	1429
Surr: 4-Bromofluorobenzene	106	80-120	%Rec	5	11/9/2018 10:48:48 AM 41	1429

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 1 of 8
	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, Inc.

Date Reported: 11/12/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-44R

 Project:
 HEC Lucerne 1
 Collection Date: 11/8/2018 2:12:00 PM

 Lab ID:
 1811502-002
 Matrix: MEOH (SOIL)
 Received Date: 11/9/2018 8:00:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch	l_
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS				Analyst: Irm	
Diesel Range Organics (DRO)	12	9.7	mg/Kg	1	11/9/2018 11:30:17 AM 41442	<u>.</u>
Motor Oil Range Organics (MRO)	ND	48	mg/Kg	1	11/9/2018 11:30:17 AM 41442	<u>'</u>
Surr: DNOP	87.4	50.6-138	%Rec	1	11/9/2018 11:30:17 AM 41442	:
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB	
Gasoline Range Organics (GRO)	ND	18	mg/Kg	5	11/9/2018 11:12:16 AM 41429)
Surr: BFB	95.2	73.8-119	%Rec	5	11/9/2018 11:12:16 AM 41429)
EPA METHOD 8021B: VOLATILES					Analyst: NSB	
Benzene	ND	0.088	mg/Kg	5	11/9/2018 11:12:16 AM 41429)
Toluene	ND	0.18	mg/Kg	5	11/9/2018 11:12:16 AM 41429)
Ethylbenzene	ND	0.18	mg/Kg	5	11/9/2018 11:12:16 AM 41429)
Xylenes, Total	ND	0.35	mg/Kg	5	11/9/2018 11:12:16 AM 41429)
Surr: 4-Bromofluorobenzene	108	80-120	%Rec	5	11/9/2018 11:12:16 AM 41429)

				-
Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 8
	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



Date Reported: 11/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-47R

 Project:
 HEC Lucerne 1
 Collection Date: 11/8/2018 2:20:00 PM

 Lab ID:
 1811502-003
 Matrix: MEOH (SOIL)
 Received Date: 11/9/2018 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	:: Irm
Diesel Range Organics (DRO)	150	9.9		mg/Kg	1	11/9/2018 11:54:36 AM	41442
Motor Oil Range Organics (MRO)	59	50		mg/Kg	1	11/9/2018 11:54:36 AM	41442
Surr: DNOP	95.1	50.6-138		%Rec	1	11/9/2018 11:54:36 AM	41442
EPA METHOD 8015D: GASOLINE RANGE						Analyst	:: NSB
Gasoline Range Organics (GRO)	56	17		mg/Kg	5	11/9/2018 11:35:49 AM	41429
Surr: BFB	205	73.8-119	S	%Rec	5	11/9/2018 11:35:49 AM	41429
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	0.23	0.087		mg/Kg	5	11/9/2018 11:35:49 AM	41429
Toluene	ND	0.17		mg/Kg	5	11/9/2018 11:35:49 AM	41429
Ethylbenzene	0.24	0.17		mg/Kg	5	11/9/2018 11:35:49 AM	41429
Xylenes, Total	2.4	0.35		mg/Kg	5	11/9/2018 11:35:49 AM	41429
Surr: 4-Bromofluorobenzene	116	80-120		%Rec	5	11/9/2018 11:35:49 AM	41429

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 8
	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

Removed by excavation -HW

Analytical ReportLab Order **1811502**

Date Reported: 11/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-48R

 Project:
 HEC Lucerne 1
 Collection Date: 11/8/2018 2:32:00 PM

 Lab ID:
 1811502-004
 Matrix: MEOH (SOIL)
 Received Date: 11/9/2018 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst:	Irm
Diesel Range Organics (DRO)	140	9.8		mg/Kg	1	11/9/2018 12:18:50 PM	41442
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	11/9/2018 12:18:50 PM	41442
Surr: DNOP	96.0	50.6-138		%Rec	1	11/9/2018 12:18:50 PM	41442
EPA METHOD 8015D: GASOLINE RANGE						Analyst:	NSB
Gasoline Range Organics (GRO)	ND	17		mg/Kg	5	11/9/2018 11:59:18 AM	41429
Surr: BFB	131	73.8-119	S	%Rec	5	11/9/2018 11:59:18 AM	41429
EPA METHOD 8021B: VOLATILES						Analyst:	NSB
Benzene	ND	0.086		mg/Kg	5	11/9/2018 11:59:18 AM	41429
Toluene	ND	0.17		mg/Kg	5	11/9/2018 11:59:18 AM	41429
Ethylbenzene	ND	0.17		mg/Kg	5	11/9/2018 11:59:18 AM	41429
Xylenes, Total	0.53	0.35		mg/Kg	5	11/9/2018 11:59:18 AM	41429
Surr: 4-Bromofluorobenzene	112	80-120		%Rec	5	11/9/2018 11:59:18 AM	41429

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 8
	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

Removed by excavation -HW

Analytical ReportLab Order **1811502**

Date Reported: 11/12/2018

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC Client Sample ID: SC-51R

 Project:
 HEC Lucerne 1
 Collection Date: 11/8/2018 2:45:00 PM

 Lab ID:
 1811502-005
 Matrix: MEOH (SOIL)
 Received Date: 11/9/2018 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGA	ANICS					Analyst	: Irm
Diesel Range Organics (DRO)	110	9.4		mg/Kg	1	11/9/2018 12:43:08 PM	41442
Motor Oil Range Organics (MRO)	ND	47		mg/Kg	1	11/9/2018 12:43:08 PM	41442
Surr: DNOP	94.4	50.6-138		%Rec	1	11/9/2018 12:43:08 PM	41442
EPA METHOD 8015D: GASOLINE RANGE						Analyst	: NSB
Gasoline Range Organics (GRO)	180	18		mg/Kg	5	11/9/2018 12:22:50 PM	41429
Surr: BFB	363	73.8-119	S	%Rec	5	11/9/2018 12:22:50 PM	41429
EPA METHOD 8021B: VOLATILES						Analyst	: NSB
Benzene	0.20	0.089		mg/Kg	5	11/9/2018 12:22:50 PM	41429
Toluene	2.2	0.18		mg/Kg	5	11/9/2018 12:22:50 PM	41429
Ethylbenzene	0.98	0.18		mg/Kg	5	11/9/2018 12:22:50 PM	41429
Xylenes, Total	13	0.36		mg/Kg	5	11/9/2018 12:22:50 PM	41429
Surr: 4-Bromofluorobenzene	118	80-120		%Rec	5	11/9/2018 12:22:50 PM	41429

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 5 of 8
	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, Inc.

WO#: 1811502

12-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID LCS-41442 SampType: LCS TestCode: EPA Method 8015M/D: Diesel Range Organics Client ID: LCSS Batch ID: 41442 RunNo: 55532 Prep Date: 11/9/2018 Analysis Date: 11/9/2018 SeqNo: 1849517 Units: mg/Kg Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 46 10 O 91.1 50.00 70 130

Surr: DNOP 4.2 5.000 84.6 50.6 138

Sample ID MB-41442 SampType: MBLK TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: PBS Batch ID: 41442 RunNo: 55532

Analysis Date: 11/9/2018 Prep Date: 11/9/2018 SeqNo: 1849518 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Diesel Range Organics (DRO) ND 10 ND 50 Motor Oil Range Organics (MRO)

Surr: DNOP 8.3 10.00 83.0 50.6 138

Sample ID 1811502-005AMS SampType: MS TestCode: EPA Method 8015M/D: Diesel Range Organics

Client ID: SC-51R Batch ID: 41442 RunNo: 55532

Prep Date: 11/9/2018 Analysis Date: 11/9/2018 SeqNo: 1849779 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual Diesel Range Organics (DRO) 140 9.7 48.50 107.4 58.7 53.5 126

Surr: DNOP 3.5 4.850 72.6 50.6 138

Sample ID 1811502-005AMSD TestCode: EPA Method 8015M/D: Diesel Range Organics SampType: MSD

Client ID: SC-51R Batch ID: 41442 RunNo: 55532

Prep Date: 11/9/2018 Analysis Date: 11/9/2018 SeqNo: 1849780 Units: mg/Kg

SPK value SPK Ref Val %REC LowLimit %RPD **RPDLimit** Analyte Result **PQL** HighLimit Qual Diesel Range Organics (DRO) 150 9.8 48.83 107.4 79.1 53.5 126 7.18 21.7 Surr: DNOP 4.6 4.883 95.0 50.6 138 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 6 of 8

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811502

12-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID MB-41429 SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: **PBS** Batch ID: 41429 RunNo: 55537

Prep Date: 11/8/2018 Analysis Date: 11/9/2018 SeqNo: 1850020 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 90.5 73.8 119

TestCode: EPA Method 8015D: Gasoline Range Sample ID LCS-41429 SampType: LCS

Client ID: LCSS Batch ID: 41429 RunNo: 55537

Prep Date: 11/8/2018 Analysis Date: 11/9/2018 SeqNo: 1850021 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) 5.0 25.00 108 80.1 123 1100 1000 73.8 Surr: BFB 110 119

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

Reporting Detection Limit

J Analyte detected below quantitation limits

Page 7 of 8

P Sample pH Not In Range

RL

W Sample container temperature is out of limit as specified

Hall Environmental Analysis Laboratory, Inc.

WO#: **1811502**

12-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID MB-41429 SampType: MBLK TestCode: EPA Method 8021B: Volatiles **PBS** Client ID: Batch ID: 41429 RunNo: 55537 Prep Date: 11/8/2018 Analysis Date: 11/9/2018 SeqNo: 1850035 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-41429 SampType: LCS TestCode: EP.						EPA Method 8021B: Volatiles							
Client ID: LCSS	Batc	h ID: 41	429	R	RunNo: 5	5537							
Prep Date: 11/8/2018	Analysis [Date: 11	1/9/2018	S	SeqNo: 1	850036	Units: mg/k	(g					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	0.92	0.025	1.000	0	92.0	80	120						
Toluene	0.95	0.050	1.000	0	95.2	80	120						
Ethylbenzene	0.97	0.050	1.000	0	96.8	80	120						
Xylenes, Total	2.9	0.10	3.000	0	97.9	80	120						
Surr: 4-Bromofluorobenzene	1.1		1.000		108	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 Detection Limit
- W Sample container temperature is out of limit as specified

Page 8 of 8



Hall Environmental Analysis Laboratory 4901 Hawkins NE Albuquerque, NM 87105 TEL: 505-345-3975 FAX: 505-345-4107

Website: www.hallenvironmental.con

Sample Log-In Check List

Client Name:	RULE ENGINEERING LL	Work Order Numl	ber: 1811502		RcptNo: 1	_
Received By:	Victoria Zellar	11/9/2018 8:00:00 /	Δ <i>Ν</i> 4	Victoria Gella)	
Completed By:	Ashley Gallegos	11/9/2018 8:36:59		A->	•	
-	ENM .		-1141	3		
Reviewed By:	COM	11/9/18	Labele	ed by	DAD 11/0	9/18
Chain of Cus	stody					
1. Is Chain of C	ustody complete?		Yes 🗹	No 🗌	Not Present	
2. How was the	sample delivered?		Courier			
Log In						
3. Was an attern	npt made to cool the sample	s?	Yes 🗸	No 🗌	NA 🗌	
4. Were all sam	ples received at a temperatu	re of >0° C to 6.0°C	Yes 🗹	No 🗌	NA 🗆	
5. Sample(s) in	proper container(s)?		Yes 🗹	No 🗔		
6. Sufficient sam	ple volume for indicated tes	it(s)?	Yes 🗸	No 🗌		
7. Are samples (except VOA and ONG) prop	erly preserved?	Yes 🗹	No 🗌		
8. Was preserva	tive added to bottles?		Yes 🗌	No 🗹	NA 🗆	
9. VOA vials hav	e zero headspace?		Yes 🗌	No 🗆 🗈	No VOA Vials 🗹	
10. Were any san	mple containers received bro	oken?	Yes	No 🗹 📋		
					f of preserved pottles checked	
	ork match bottle labels? ancies on chain of custody)		Yes 🗹	No ∐ ∫ f	orpH: 	2 unless noted)
	correctly identified on Chain	of Custody?	Yes 🗹	No 🗆 📗	Adjusted?	
	t analyses were requested?	, -	Yes 🗹	No 🗆		
1 4 . Were all holdi	ng times able to be met? ustomer for authorization.)		Yes 🗹	No 🗆	Checked by: DA	81/po/11 di
-	ing (if applicable)					
	otified of all discrepancies wi	th this order?	Yes 🗌	No 🗌	NA 🔽	
[····	Notified:		·			
By Who		Date Via:	 □ eMail □ P		In Person	
Regard	9	; VIa.	□ elviaii □ F	none Fax		
	nstructions:					
16. Additional re	marks:			After the second of the second		
17. <u>Cooler Infor</u>	mation					
Cooler No		Seal Intact Seal No	Seal Date	Signed By		
1	3.7 Good	Yes				

INTERNATION NAMED IN THE	:	www.nallenvironmental.com 4901 Hawkins NE - Albuquerque, NM 87109	 Analysis	(O)	(SI)	OA MIS	(1.81) (1.40) (1.40) (1.40) (0.40) (0.40)	4.00 (CH	BTEX + MTB TPH 8015B TPH (Metho TPH (Metho BDB (Metho BCRA 8 Me Anions (F,Cl B081 Pestici 6081 Pestici 6081 Pestici 6081 Pestici	**		X	X	\(\frac{1}{2}\)					clo Clora Cardoan	Inceessary, 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.
Turn-Around Time:	□ Standard ★ Rush Same Day Project Name:	450 LUCONO #1				Heather Woods	s pag	Temperature: 3, 7	Container Preservative HEAL No. X Type and # Type Container Co		MOH KIND MOH MOH MON - 002 X	2) Mest	miothin -004	Medicine Medicine -005 x				Received by: Children WZ Date Time Rer	Latel Time	racted to other accredited laboratories. This serves as notice of this possi
Record	Client: Rule Engineering	Mailing Address: 50 Area 1 8 SV 205	Phone #: (505) 7(6-2787	email or Fax#: hunged s@ruleenging .com Project Manager:	QA/QC Package:	✓ Standard □ Level 4 (Full Validation)	Accreditation	□ EDD (Type)	Matrix Sample Request ID	1/8/10 1400 Soil SC-38R	501 5C-44R	56,1 5C-47R	SC-48R	Soil SC-51R		The state of the s		Time: Relinquished by: 8 1710 Auth M. Meun.	Time: Relinquished by:	I necessary, samples submitted to Hall Environmental may be subcon



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

November 26, 2018

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

FAX

RE: HEC Lucerne 1 OrderNo.: 1811B21

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 11/21/2018 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

and st

4901 Hawkins NE

Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/26/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-47 (11/20/18)

 Project:
 HEC Lucerne 1
 Collection Date: 11/20/2018 9:10:00 AM

 Lab ID:
 1811B21-001
 Matrix: SOIL
 Received Date: 11/21/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	ANICS				Analyst: Irm
Diesel Range Organics (DRO)	29	9.9	mg/Kg	1	11/21/2018 10:14:19 AM 41674
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/21/2018 10:14:19 AM 41674
Surr: DNOP	105	50.6-138	%Rec	1	11/21/2018 10:14:19 AM 41674
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	19	mg/Kg	5	11/21/2018 9:34:01 AM G55809
Surr: BFB	101	73.8-119	%Rec	5	11/21/2018 9:34:01 AM G55809
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.093	mg/Kg	5	11/21/2018 9:34:01 AM B55809
Toluene	ND	0.19	mg/Kg	5	11/21/2018 9:34:01 AM B55809
Ethylbenzene	ND	0.19	mg/Kg	5	11/21/2018 9:34:01 AM B55809
Xylenes, Total	ND	0.37	mg/Kg	5	11/21/2018 9:34:01 AM B55809
Surr: 4-Bromofluorobenzene	92.4	80-120	%Rec	5	11/21/2018 9:34:01 AM B55809

vel. B Analyte detected in the associated Method Blank	
E Value above quantitation range	
exceeded J Analyte detected below quantitation limits Page 1 of 7	
P Sample pH Not In Range	
RL Reporting Detection Limit	
on or matrix W Sample container temperature is out of limit as specified	
e	E Value above quantitation range Analyte detected below quantitation limits Page 1 of 7 Reporting Detection Limit

Analytical ReportLab Order **1811B21**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/26/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-48 (11/20/18)

 Project:
 HEC Lucerne 1
 Collection Date: 11/20/2018 9:23:00 AM

 Lab ID:
 1811B21-002
 Matrix: SOIL
 Received Date: 11/21/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OR	GANICS				Analy	st: Irm
Diesel Range Organics (DRO)	16	9.8	mg/Kg	1	11/21/2018 10:36:12	AM 41674
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/21/2018 10:36:12	AM 41674
Surr: DNOP	103	50.6-138	%Rec	1	11/21/2018 10:36:12	AM 41674
EPA METHOD 8015D: GASOLINE RANGE					Analys	st: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	11/21/2018 9:56:56 A	M G55809
Surr: BFB	92.7	73.8-119	%Rec	5	11/21/2018 9:56:56 A	M G55809
EPA METHOD 8021B: VOLATILES					Analys	st: NSB
Benzene	ND	0.099	mg/Kg	5	11/21/2018 9:56:56 A	M B55809
Toluene	ND	0.20	mg/Kg	5	11/21/2018 9:56:56 A	M B55809
Ethylbenzene	ND	0.20	mg/Kg	5	11/21/2018 9:56:56 A	M B55809
Xylenes, Total	ND	0.40	mg/Kg	5	11/21/2018 9:56:56 A	M B55809
Surr: 4-Bromofluorobenzene	94.2	80-120	%Rec	5	11/21/2018 9:56:56 A	M B55809

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 2 of 7
	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 ReportLab Order **1811B21**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/26/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-51 (11/20/18)

 Project:
 HEC Lucerne 1
 Collection Date: 11/20/2018 9:35:00 AM

 Lab ID:
 1811B21-003
 Matrix: SOIL
 Received Date: 11/21/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE OF	RGANICS				Anal	yst: Irm
Diesel Range Organics (DRO)	ND	9.9	mg/Kg	1	11/21/2018 10:58:15	5 AM 41674
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/21/2018 10:58:15	5 AM 41674
Surr: DNOP	107	50.6-138	%Rec	1	11/21/2018 10:58:15	5 AM 41674
EPA METHOD 8015D: GASOLINE RANGE					Anal	yst: NSB
Gasoline Range Organics (GRO)	ND	22	mg/Kg	5	11/21/2018 10:19:45	5 AM G55809
Surr: BFB	92.9	73.8-119	%Rec	5	11/21/2018 10:19:45	AM G55809
EPA METHOD 8021B: VOLATILES					Anal	yst: NSB
Benzene	ND	0.11	mg/Kg	5	11/21/2018 10:19:45	AM B55809
Toluene	ND	0.22	mg/Kg	5	11/21/2018 10:19:45	AM B55809
Ethylbenzene	ND	0.22	mg/Kg	5	11/21/2018 10:19:45	AM B55809
Xylenes, Total	ND	0.44	mg/Kg	5	11/21/2018 10:19:45	5 AM B55809
Surr: 4-Bromofluorobenzene	93.5	80-120	%Rec	5	11/21/2018 10:19:45	5 AM B55809

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 3 of 7
	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 ReportLab Order **1811B21**

Hall Environmental Analysis Laboratory, Inc.

Date Reported: 11/26/2018

CLIENT: Rule Engineering LLC Client Sample ID: SC-52 (11/20/18)

 Project:
 HEC Lucerne 1
 Collection Date: 11/20/2018 9:48:00 AM

 Lab ID:
 1811B21-004
 Matrix: SOIL
 Received Date: 11/21/2018 8:30:00 AM

Analyses	Result	PQL	Qual Units	DF	Date Analyzed Batch
EPA METHOD 8015M/D: DIESEL RANGE ORG	SANICS				Analyst: Irm
Diesel Range Organics (DRO)	ND	9.8	mg/Kg	1	11/21/2018 11:20:13 AM 41674
Motor Oil Range Organics (MRO)	ND	49	mg/Kg	1	11/21/2018 11:20:13 AM 41674
Surr: DNOP	105	50.6-138	%Rec	1	11/21/2018 11:20:13 AM 41674
EPA METHOD 8015D: GASOLINE RANGE					Analyst: NSB
Gasoline Range Organics (GRO)	ND	20	mg/Kg	5	11/21/2018 10:42:31 AM G55809
Surr: BFB	87.0	73.8-119	%Rec	5	11/21/2018 10:42:31 AM G55809
EPA METHOD 8021B: VOLATILES					Analyst: NSB
Benzene	ND	0.10	mg/Kg	5	11/21/2018 10:42:31 AM B55809
Toluene	ND	0.20	mg/Kg	5	11/21/2018 10:42:31 AM B55809
Ethylbenzene	ND	0.20	mg/Kg	5	11/21/2018 10:42:31 AM B55809
Xylenes, Total	ND	0.41	mg/Kg	5	11/21/2018 10:42:31 AM B55809
Surr: 4-Bromofluorobenzene	88.5	80-120	%Rec	5	11/21/2018 10:42:31 AM B55809

Qualifiers:	*	Value exceeds Maximum Contaminant Level.	В	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	Н	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits Page 4 of 7
	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, Inc.

WO#: 1811B21

26-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Prep Date: 11/20/2018

Sample ID LCS-41674	SampTy	/pe: LC	S	TestCode: EPA Method 8015M/D: Diesel Range Organics											
Client ID: LCSS	Batch	ID: 41	674	F	RunNo: 5	5806									
Prep Date: 11/21/2018	Analysis Da	ate: 1 1	1/21/2018	5	SeqNo: 1	861020	Units: mg/h	(g							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual					
Diesel Range Organics (DRO)	56	10	50.00	0	112	70	130								
Surr: DNOP	4.6		5.000		91.6	50.6	138								
Sample ID MB-41674	SampTy	/pe: ME	BLK	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics						
Client ID: PBS	Batch	ID: 41	674	RunNo: 55806											
Prep Date: 11/21/2018	Analysis Da	ate: 1 1	1/21/2018	9	SeqNo: 1	861021	Units: mg/h	(g							
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	9.7		10.00		96.8	50.6	138								
Sample ID LCS-41655	SampTy	/pe: LC	:s	Tes	tCode: El	PA Method	8015M/D: Di	esel Rang	e Organics						
Client ID: LCSS	Batch	ID: 41	655	F	RunNo: 5	5806									

Analyte	Result PQL SPK valu	e SPK Ref Val %REC	LowLimit HighLim	nit %RPD RPDLimit	Qual
Surr: DNOP	4.2 5.00	0 83.7	50.6 13	38	
Sample ID MB-41655	SampType: MBLK	TestCode: E	EPA Method 8015M/D:	Diesel Range Organics	
Client ID: PBS	Batch ID: 41655	RunNo:	55806		
Prep Date: 11/20/2018	Analysis Date: 11/21/2018	SeqNo: 1	1861168 Units: %	Rec	

SPK value SPK Ref Val %REC

SeqNo: 1861167

LowLimit

Units: %Rec

HighLimit

%RPD

RPDLimit

Qual

Surr: DNOP 8.7 10.00 86.9 50.6 138

Analysis Date: 11/21/2018

Qualifiers:

Analyte

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В 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

Sample container temperature is out of limit as specified

Page 5 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811B21

26-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8015D: Gasoline Range

Client ID: **PBS** Batch ID: **G55809** RunNo: 55809

Prep Date: Analysis Date: 11/21/2018 SeqNo: 1861271 Units: mg/Kg

Analyte Result **PQL** SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) ND 5.0

1000 Surr: BFB 930 92.7 73.8 119

Sample ID 2.5UG GRO LCS SampType: LCS TestCode: EPA Method 8015D: Gasoline Range

Client ID: LCSS Batch ID: G55809 RunNo: 55809

Prep Date: Analysis Date: 11/21/2018 SeqNo: 1861272 Units: mg/Kg

Analyte Result PQL SPK value SPK Ref Val %REC LowLimit HighLimit %RPD **RPDLimit** Qual

Gasoline Range Organics (GRO) 5.0 25.00 0 96.1 80.1 123 Surr: BFB 1100 1000 106 73.8 119

TestCode: EPA Method 8015D: Gasoline Range Sample ID 1811B21-001AMS SampType: MS

Client ID: SC-47 (11/20/18) Batch ID: G55809 RunNo: 55809

Prep Date: Analysis Date: 11/21/2018 SeqNo: 1861273 Units: mg/Kg

SPK value SPK Ref Val %REC %RPD **RPDLimit** Analyte Result LowLimit HighLimit Qual

Gasoline Range Organics (GRO) 100 19 92.72 7.418 105 77.8 128 Surr: BFB 4200 3709 73.8 113 119

Sample ID 1811B21-001AMSD SampType: MSD TestCode: EPA Method 8015D: Gasoline Range

Client ID: SC-47 (11/20/18) Batch ID: G55809 RunNo: 55809

Analysis Date: 11/21/2018 Prep Date: SeqNo: 1861274 Units: mg/Kg

%REC Analyte Result **PQL** SPK value SPK Ref Val LowLimit HighLimit %RPD **RPDLimit** Qual Gasoline Range Organics (GRO) 100 19 92.72 7.418 102 77.8 128 2.52 20 Surr: BFB 4100 3709 111 73.8 119 0 0

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Η Holding times for preparation or analysis exceeded

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

В Analyte detected in the associated Method Blank

Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 6 of 7

Hall Environmental Analysis Laboratory, Inc.

WO#: 1811B21

26-Nov-18

Client: Rule Engineering LLC

Project: HEC Lucerne 1

Sample ID RB SampType: MBLK TestCode: EPA Method 8021B: Volatiles

Client ID: PBS Batch ID: **B55809** RunNo: 55809

Analysis Date: 11/21/2018 Prep Date: SeqNo: 1861315 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 94.4 80 120

Sample ID 100NG BTEX LCS SampType: LCS TestCode: EPA Method 8021B: Volatiles

Client ID: LCSS Batch ID: **B55809** RunNo: 55809

Prep Date:	Analysis [Date: 1 1	1/21/2018	S	SeqNo: 1861316 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	98.3	80	120			
Toluene	1.0	0.050	1.000	0	100	80	120			
Ethylbenzene	0.99	0.050	1.000	0	99.2	80	120			
Xylenes, Total	3.0	0.10	3.000	0	99.0	80	120			
Surr: 4-Bromofluorobenzene	0.92		1.000		91.8	80	120			

Sample ID 1811B21-002AMS SampType: MS TestCode: EPA Method 8021B: Volatiles

Client ID: SC-48 (11/20/18) Batch ID: **B55809** RunNo: 55809

Prep Date:	Analysis [Date: 1 1	1/21/2018	S	SeqNo: 18	861317	Units: mg/Kg						
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual			
Benzene	3.9	0.099	3.959	0.01516	98.8	63.9	127						
Toluene	4.1	0.20	3.959	0.02546	103	69.9	131						
Ethylbenzene	4.1	0.20	3.959	0	103	71	132						
Xylenes, Total	12	0.40	11.88	0.05071	103	71.8	131						
Surr: 4-Bromofluorobenzene	3.9		3.959		98.1	80	120						

Sample ID 1811B21-002AMSD SampType: MSD TestCode: EPA Method 8021B: Volatiles

Client ID: SC-48 (11/20/18) Batch ID: **B55809** RunNo: 55809

G. G. 10 (1 1/20/10)			0000	•		0000				
Prep Date:	Analysis D	oate: 11	/21/2018	S	eqNo: 1	861318	Units: mg/K	(g		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	3.9	0.099	3.959	0.01516	97.2	63.9	127	1.64	20	
Toluene	4.0	0.20	3.959	0.02546	101	69.9	131	1.41	20	
Ethylbenzene	4.0	0.20	3.959	0	101	71	132	1.49	20	
Xylenes, Total	12	0.40	11.88	0.05071	101	71.8	131	1.73	20	
Surr: 4-Bromofluorobenzene	3.8		3.959		96.9	80	120	0	0	

Qualifiers:

Value exceeds Maximum Contaminant Level.

D Sample Diluted Due to Matrix

Holding times for preparation or analysis exceeded Η

ND Not Detected at the Reporting Limit

POL Practical Quanitative Limit

% Recovery outside of range due to dilution or matrix

- В Analyte detected in the associated Method Blank
- Е Value above quantitation range

J Analyte detected below quantitation limits

P Sample pH Not In Range

RLReporting Detection Limit

Sample container temperature is out of limit as specified

Page 7 of 7



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: 1811B21 RcptNo: 1 Received By: Anne Thorne 11/21/2018 8:30:00 AM anne Am Completed By: **Anne Thorne** 11/21/2018 8:36:04 AM Reviewed By: Capiled by: At Chain of Custody Yes 🗸 No 🗆 1. Is Chain of Custody complete? Not Present 2. How was the sample delivered? Courier Log In No 🗆 NA 🗌 Yes 🗹 Was an attempt made to cool the samples? No 🗌 NA 🗆 4. Were all samples received at a temperature of >0° C to 6.0°C Yes 🗸 No 🗆 Sample(s) in proper container(s)? Yes 🗸 6. Sufficient sample volume for indicated test(s)? Yes 🗸 No 🗀 7. Are samples (except VOA and ONG) properly preserved? Nο No 🗹 Yes 🗌 NA 🗌 8. Was preservative added to bottles? No VOA Vials 9. VOA viais have zero headspace? No 🗀 Yes No 🗹 10. Were any sample containers received broken? Yes # of preserved bottles checked Yes 🗸 No 🗌 for pH: 11. Does paperwork match bottle labels? (<2 or >12 unless noted) (Note discrepancies on chain of custody) Adjusted? 12. Are matrices correctly identified on Chain of Custody? \checkmark No Yes No 🗌 13. Is it clear what analyses were requested? Yes V Checked by: 14. Were all holding times able to be met? Yes 🗹 No 🗌 (If no, notify customer for authorization.) Special Handling (if applicable) 15. Was client notified of all discrepancies with this order? NA 🗹 Yes 🗌 No 🗀 Person Notified: Date By Whom: Via: eMail Phone Fax In Person Regarding: Client Instructions: 16. Additional remarks: 17. Cooler Information

Seal Date

Cooler No

1.4

Temp °C | Condition | Seal Intact | Seal No

Yes

Good

_	ANALYSIS LABORATORY	www.hallenvironmental.com	4901 Hawkins NE - Albuquerque, NM 87109	Tel. 505-345-3975 Fax 505-345-4107	Analysis	(*0	S'*(MIS	(1.4) (1.4) (2.70) (2.808)	40 (41)	bo bo 0,0 hic	TPH 8015B TPH (Methorements) (Methorements) (Methorements) (B31 Methorements) (F,C) (Semi controller)		χ̂	×	X								s: Ed Bill to Hillerp , Clava Cardoza
			49(<u>†</u>								BTEX + MT		×	~	· ×							,	Remarks: Divect
	X Rush Same Day	.							Shods			#EAL NO.	100	702	.									Date Time R 11/2://8 1-7 42
Time:		ΰ	scene #			ager:		y Woods	eather L			Preservative Type	ا الراح الراح									#		1 Jose
Turn-Around Time:	☐ Standard	riojectinalile.	HEC LUCAMA	Project #:		Project Manage	**** ***	Hearing	Sampler:	33		Container Type and #	() ()	(i)Uloz (izz	() yoz (, b.	(i) yoz Gien					/			Received by:
Record	Client: Rule Engineering		Mailing Address: 乏い Aivjooトひr Ste 205	NA 8740)	72767	email or Fax#: ในมณณณ์ ระชาบายเหย่าหลังค่าครู. Com	i	☐ Level 4 (Full Validation)				Sample Request ID	SC-47(N/20/18)	SC-48 (11/20/18)	56-51(11/20/18)	SC-52 (11/20/18)				THE PROPERTY OF THE PROPERTY O				wished by: With M. Waller A. Wished by:
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