District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, 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

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

Form C-141
Revised August 8, 2011

Submit 1 Copy to appropriate District Office to accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company **Burlington Resources, a Wholly Owned Subsidiary of ConocoPhillips Company**	Contact **Lisa Hunter**
Address **3401 East 30th St, Farmington, NM**	Telephone No. **(505) 258-1607**
Facility Name: **Huerfano 193**	Facility Type: **Gas Well**

Surface Owner **Federal**	Mineral Owner **Federal**	API No.**3004520395**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
J	**29**	**26N**	**09W**	**1790**	**South**	**1650**	**East**	**San Juan**

Latitude 36.45673 Longitude -107.80803

NATURE OF RELEASE

Type of Release **Historic Contamination**	Volume of Release **Unknown**	Volume Recovered **0**
Source of Release **Possible old earthen or dehy pit**	Date and Hour of Occurrence **Unknown**	Date and Hour of Discovery **07/25/2016 @ 1:00 p.m.**
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom? **N/A**	
By Whom? **N/A**	Date and Hour **N/A**	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. **N/A**	

OIL CONS. DIV DIST. 3
OCT 24 2016

If a Watercourse was Impacted, Describe Fully.*
N/A

Describe Cause of Problem and Remedial Action Taken.*
While cleaning up a small spill in the cribbing area of the Huerfano Unit 193 with a hydrovac truck more contamination (and older) was found. Third-party environmental was on location to sample and direct placement of pot holes to help delineate the affected area. The excavation at end of today, is approximately 27 feet x 21 feet and up to 13 feet deep. The base is at what appears to be degraded sandstone, and is below NMOCD Action Levels at about 12-13 feet. The contamination is concentrated on the west end near the separator. The contamination is old with some liner mixed in. It may be the an old earthen or dehy pit.

Describe Area Affected and Cleanup Action Taken.*
ConocoPhillips will continue remediation efforts.
Excavation was 50' x 30' x 14' Deep. Approximately 778 c/yds of soil was transported to Envirotech Land Farm. Analytical results were below the NMOCD Action Level standards – no further action required. The soil sampling report is attached for review.

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

Signature:	OIL CONSERVATION DIVISION
Printed Name: **Lisa Hunter**	Approved by Environmental Specialist:
Title: **Field Environmental Specialist**	Approval Date: 10/19/2016 Expiration Date:
E-mail Address: **Lisa.Hunter@cop.com**	Conditions of Approval: NCS1620926898 Attached ☐
Date: **October 18, 2016** Phone: **(505) 258-1607**	

* Attach Additional Sheets If Necessary

49

Huerfano #193 Release Report

Unit Letter J, Section 29, Township 26 North, Range 9 West
San Juan County, New Mexico

October 18, 2016

Prepared for:
ConocoPhillips
5525 Highway 64
Farmington, New Mexico 87401

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

Rule Engineering, LLC
Solutions to Regulations for Industry

ConocoPhillips
Huerfano #193 Release Report

Prepared for:

ConocoPhillips
5525 Highway 64
Farmington, New Mexico 87401

Prepared by:

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

Heather M. Woods

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

Reviewed by:

Russell Knight, PG, Principal Hydrogeologist

October 18, 2016

Table of Contents

Tables

Figures

Appendices

1.0 Introduction

The ConocoPhillips Huerfano #193 release site is located in Unit Letter J, Section 29, Township 26 North, Range 9 West, in San Juan County, New Mexico. The historical release underlying below grade tank (BGT) was discovered on July 25, 2016, during hydrovac cleanup response to a small release.

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 Release Summary

Site Name	Huerfano #193		
Site Location Description	Unit Letter J, Section 29, Township 26 North, Range 9 West		
Wellhead GPS Location	N36.45690 and W107.80869	***Release GPS Location***	N36.45710 and W107.80864
Land Jurisdiction	Bureau of Land Management	***Discovery Date***	July 25, 2016
Release Source	BGT/Historic	***Substance(s) Released***	Produced Water/Unknown
Volume Released	Undetermined	***Volume Recovered***	0 bbls
NMOCD Site Rank	10		
Distance to Nearest Surface Water	An unnamed, ephemeral wash located approximately 460 feet to the southeast		
Estimated Depth to Groundwater	Estimated to be less than 130 feet below grade surface (bgs)	***Distance to Nearest Water Well or Spring***	Greater than 1,000 feet

3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1).

Depth to groundwater at the site is estimated to be 130 feet bgs based on the reported depth to water on the cathodic well report for this location.

A review was completed of the New Mexico Office of the State Engineer (NMOSE) online New Mexico Water Rights Reporting System (NMWRRS) and no water wells were

identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

An unnamed, ephemeral wash traverses the area approximately 460 feet southeast of the release location.

Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

4.0 Field Activities

On July 25, 2016, Rule Engineering, LLC (Rule) personnel conducted initial field sampling and screening activities at the location subsequent to the hydrovac removal of soils from the base of the BGT cellar impacted by a small release. Visual indications of historical impact were observed in conjunction with field screening results for constituents of concern exceeding NMOCD action level concentrations. Rule personnel provided guidance and sampling of several test pits to assist in the delineation of the historical release. Based on the results of the test pit assessment, ConocoPhillips initiated the removal of the historically impacted soils on July 26 and 27, 2016. Rule personnel assisted in excavation guidance through soil sampling and field screening, as well as the collection of excavation confirmation samples (SC-1 through SC-14) for laboratory analysis as the walls and base of the excavation reached the final extents. Based on laboratory results for samples SC-3 and SC-7 which reported TPH concentrations in excess of the NMOCD action level of 1,000 mg/kg, the lower half of the north wall on the western side and the eastern base were extended by excavation and resampled as SC-3R and SC-7R, respectively, on August 3, 2016.

The maximum extent of the excavation measured approximately 50 feet by 30 feet by 14 feet in depth. Excavated soils and hydrovac cuttings were transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with final sample locations is included on Figure 2.

5.0 Soil Sampling

Rule collected 14 composite confirmation soil samples (SC-1 through SC-14) from the final excavation for field screening and laboratory analysis on July 26 and 27, 2016. Laboratory results for samples SC-3 and SC-7 reported concentrations of TPH exceeding the NMOCD action level; therefore, soils associated with samples SC-3 and SC-7 were removed by excavation and resampled as SC-3R and SC-7R, respectively, on August 3, 2016. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for VOCs and selected samples were also field analyzed for TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 ppm isobutylene gas. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.

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 8021B, TPH (GRO/DRO) per USEPA Method 8015M/D, and chlorides per Method 300.0.

Field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

6.0 Field Screening Results

Field screening results for excavation confirmation samples SC-1 through SC-14, SC-3R, and SC-7R indicated VOC concentrations ranging from 0.9 ppm to 809 ppm. The field TPH concentration results for those confirmation samples selected for field analysis ranged from 27.1 mg/kg to 1,120 mg/kg. Field screening results are summarized in Table 2.

7.0 Laboratory Analytical Results

Laboratory analytical results for excavation confirmation samples SC-1 through SC-14, SC-3R, and SC-7R reported benzene concentrations below the laboratory reporting limits, which are below the NMOCD action level of 10 mg/kg. Total BTEX concentrations for the excavation confirmation samples ranged from below the laboratory reporting limits to 5.7 mg/kg, which are below the NMOCD action level of 50 mg/kg. Laboratory analytical results for excavation confirmation samples SC-3 and SC-7 reported TPH concentrations of 2,177 mg/kg and 1,860 mg/kg, respectively, which exceed the NMOCD action level of 1,000 mg/kg. The lower half of the north wall on the western side and eastern base were extended by excavation and resampled as SC-3R and SC-7R, respectively. Laboratory analytical results for excavation confirmation samples SC-1 through SC-14 (included SC-3R and SC-7R, but excluding SC-3 and SC-7) ranged from below the laboratory reporting limits to 845 mg/kg, which are below the NMOCD action level of 1,000 mg/kg.

Laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

8.0 Conclusions

The ConocoPhillips Huerfano #193 release site is located in Unit Letter J, Section 29, Township 26 North, Range 9 West, in San Juan County, New Mexico. The historical release underlying below grade tank (BGT) was discovered on July 25, 2016, during hydrovac cleanup response to a small release. Following the excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-14 were collected from the resultant excavation. Laboratory analytical results reported TPH concentrations in excess of the NMOCD action level for confirmation samples SC-3 and SC-7; therefore, the additional excavation of the portions of the wall and base associated with these samples was performed. Subsequent to the additional excavation, confirmation samples SC-3R and SC-7R were collected from the final excavation which measured approximately 50 feet by 30 feet by 14 feet in depth. Laboratory analytical results for the excavation confirmation samples SC-1 through SC-14 (including SC-3R and SC-7R, but excluding SC-3 and SC-7 which were removed by excavation) reported benzene, total BTEX, and total TPH concentrations below the applicable NMOCD action levels for a site rank of 10. Excavated soils and hydrovac cuttings were transported to Envirotech Landfarm for disposal/remediation and the excavation was backfilled with clean, imported material.

Based on laboratory analytical results of the final excavation confirmation soil samples, no further work is recommended.

9.0 Closure and Limitations

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

Tables

Table 1. NMOCD Site Ranking Determination
ConocoPhillips
Huerfano #193
San Juan County, New Mexico

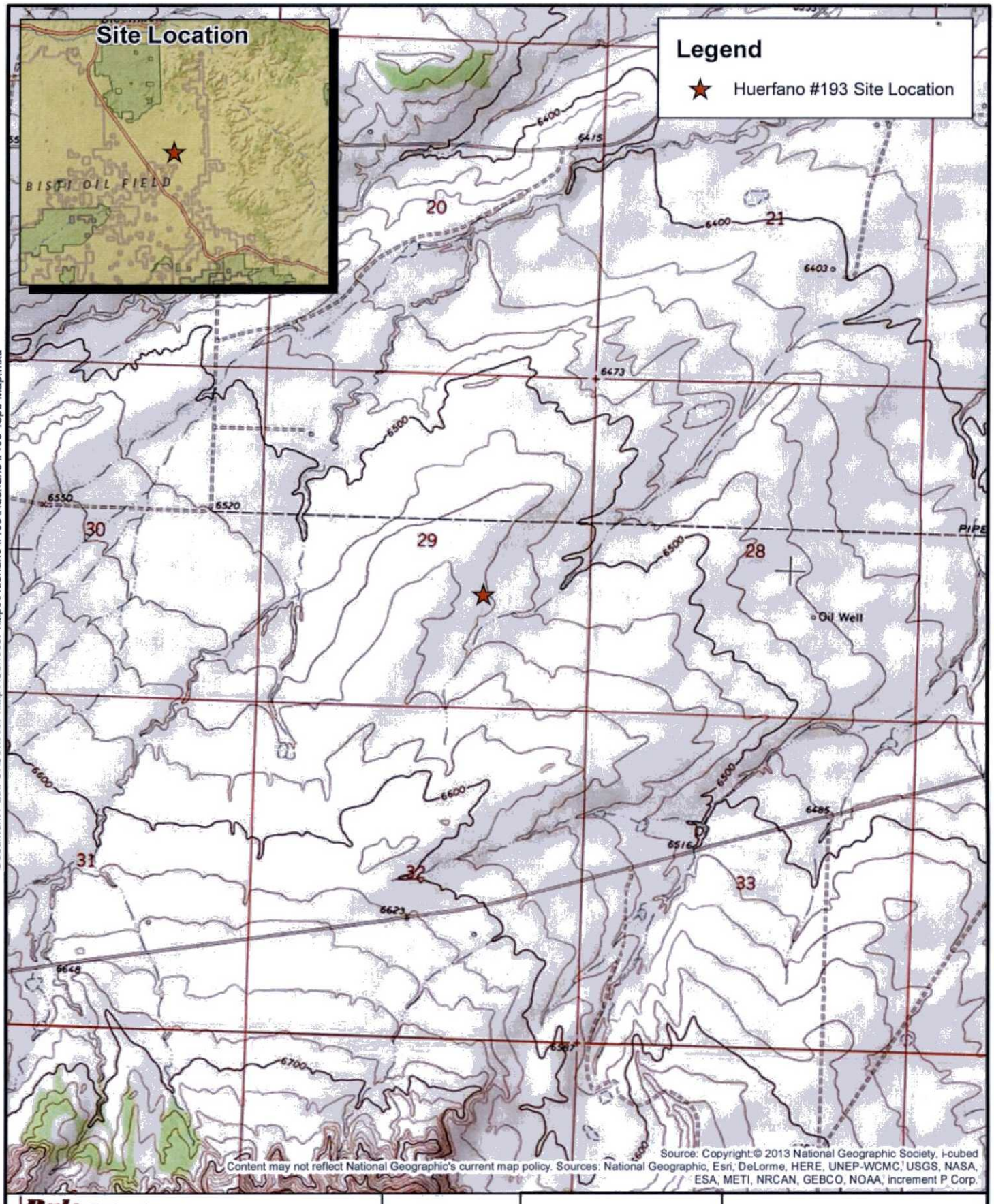
Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Estimated to be 130 feet below ground surface based on a recorded depth to groundwater on the cathodic well report for this well and elevation differential information derived from the topographic map of the area.	NMOCD Online database, Huerfano Trading Post Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Huerfano Trading Post Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	An unnamed, ephemeral wash located approximately 460 feet to the southeast of the release location.	Huerfano Trading Post Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		**10**		

Table 2. Excavation Confirmation Field Screening and Laboratory Analytical Results
ConocoPhillips
Huerfano #193
San Juan County, New Mexico

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	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 Action Level*			100	1,000**	10	NE	NE	NE	50	1,000**		
Excavation Confirmation Samples												
SC-1	7/26/2016	7 to 14	**392**	**1,020**	<0.024	<0.048	<0.048	<0.096	<0.216	15	530	300
SC-2	7/26/2016	0 to 7	48.1	--	<0.024	<0.048	<0.048	<0.096	<0.216	<4.8	<9.9	<49
SC-3R	8/3/2016	7 to 14	24.0	208	<0.019	<0.038	<0.038	<0.075	<0.170	<3.8	90	150
SC-4	7/26/2016	0 to 7	2.9	--	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	130	280
SC-5	7/26/2016	0 to 7	1.6	--	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	<10	<50
SC-6	7/26/2016	7 to 14	**412**	--	<0.024	<0.048	<0.048	0.17	0.17	33	490	280
SC-7R	8/3/2016	14	0.9	27.1	<0.021	<0.041	<0.041	<0.083	<0.186	<4.1	<9.6	<48
SC-8	7/26/2016	7 to 14	**390**	--	<0.024	<0.048	<0.048	0.10	0.10	24	360	<290
SC-9	7/26/2016	7 to 14	14.1	--	<0.023	<0.047	<0.047	<0.093	<0.210	<4.7	<9.6	<96
SC-10	7/26/2016	0 to 7	14.7	--	<0.024	<0.049	<0.049	<0.097	<0.219	<4.9	19	<100
SC-11	7/26/2016	0 to 7	2.4	--	<0.024	<0.048	<0.048	<0.095	<0.167	<4.8	<10	<50
SC-12	7/27/2016	0 to 7	2.0	52.7	<0.024	<0.048	<0.048	<0.097	<0.217	<4.8	12	<45
SC-13	7/27/2016	7 to 14	2.0	146	<0.024	<0.047	<0.047	<0.095	<0.213	<4.7	31	<49
SC-14	7/27/2016	14	87.1	**1,120**	<0.023	<0.046	<0.046	<0.093	<0.208	<4.6	300	<470
Samples Removed by Excavation												
SC-3	7/26/2016	7 to 14	**370**	--	<0.046	<0.092	0.15	0.33	0.48	**57**	**1,300**	**820**
SC-7	7/26/2016	14	**809**	--	<0.23	<0.46	0.66	5.0	5.7	**220**	**1,100**	**540**

Notes:
VOCs - volatile organic compounds
PID - photoionization detector
ft bgs - feet below grade surface
ppm - parts per million
mg/kg - milligrams per kilogram
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
NMOCD - New Mexico Oil Conservation Division
*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*
**Based on a site ranking of 10.

Figures



Document Path: U:\ConocoPhillips\ConocoPhillips\Huerfano #193\Huerfano #193 Topo Map.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

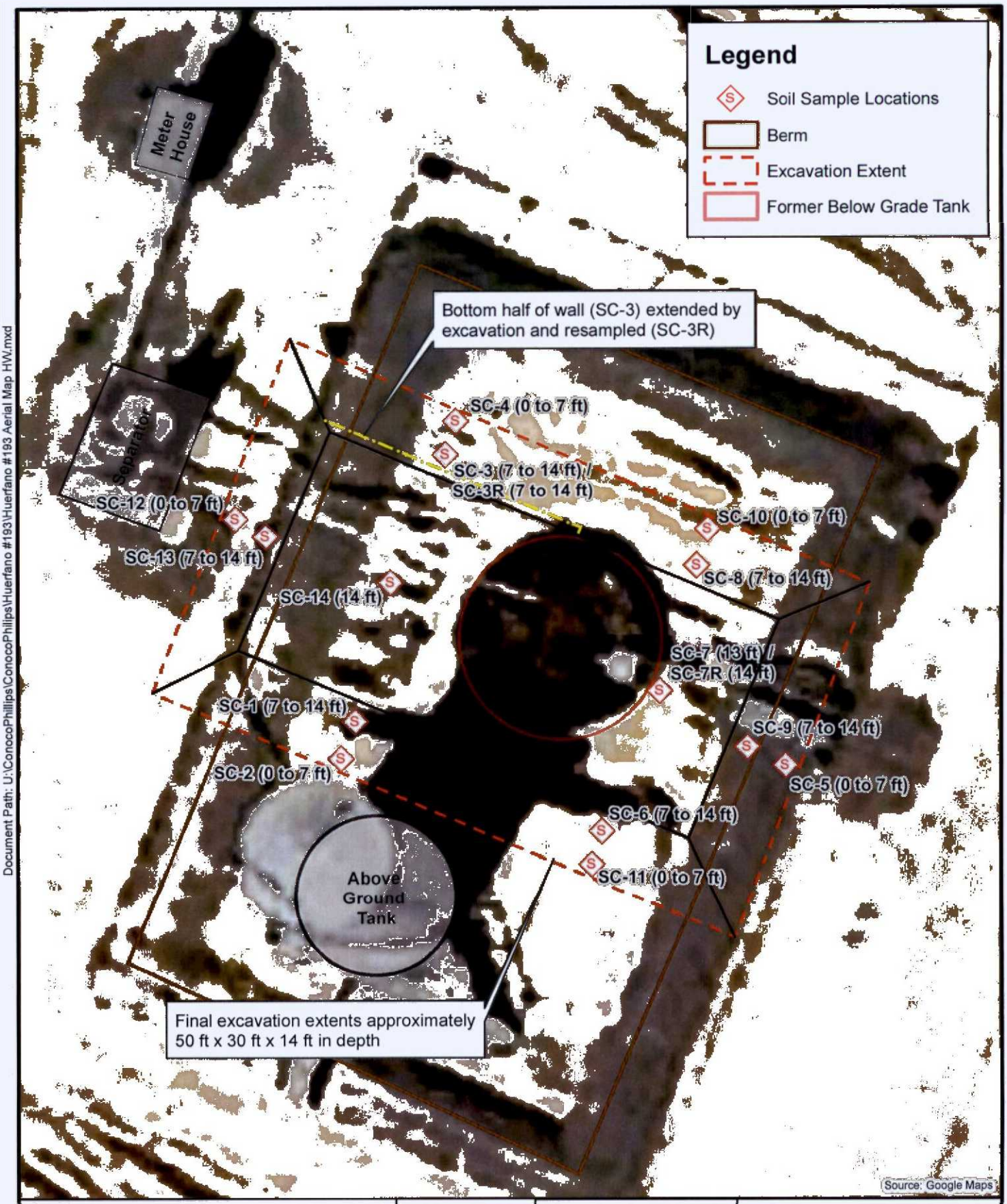
0 0.225 0.45 0.9 Miles

Huerfano Trading Post Quadrangle
1:24,000

ConocoPhillips

J-S29-T29N-R09W
N36.45710, W107.80864
San Juan County, NM
API: 30-045-20395

Figure 1
Topographic Site Map
Huerfano #193



Document Path: U:\ConocoPhillips\ConocoPhillips\Huerfano #193\Huerfano #193 Aerial Map HW.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

0 3 6 12 18 24 Feet

1 inch = 10 feet

ConocoPhillips

J-S29-T29N-R09W
N36.45710, W107.80864
San Juan County, NM
API: 30-045-20395

Figure 2
Aerial Site Map
Huerfano #193

Appendix A

Analytical Laboratory Reports

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 14, 2016

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

RE: CoP Huerfano #193 OrderNo.: 1607D71

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 11 sample(s) on 7/27/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued August 01, 2016.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1607D71**
Date Reported: **10/14/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-1
Project: CoP Huerfano #193
Collection Date: 7/26/2016 4:05:00 PM
Lab ID: 1607D71-001 **Matrix:** SOIL **Received Date:** 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	530	10		mg/Kg	1	7/28/2016 1:34:49 PM	26632
Motor Oil Range Organics (MRO)	300	50		mg/Kg	1	7/28/2016 1:34:49 PM	26632
Surr: DNOP	101	70-130		%Rec	1	7/28/2016 1:34:49 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	15	4.8		mg/Kg	1	7/28/2016 10:40:27 AM	26637
Surr: BFB	285	80-120	S	%Rec	1	7/28/2016 10:40:27 AM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 10:40:27 AM	26637
Toluene	ND	0.048		mg/Kg	1	7/28/2016 10:40:27 AM	26637
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2016 10:40:27 AM	26637
Xylenes, Total	ND	0.096		mg/Kg	1	7/28/2016 10:40:27 AM	26637
Surr: 4-Bromofluorobenzene	107	80-120		%Rec	1	7/28/2016 10:40:27 AM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-2
Project: CoP Huerfano #193
Collection Date: 7/26/2016 4:09:00 PM
Lab ID: 1607D71-002
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/28/2016 1:56:28 PM	26632
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2016 1:56:28 PM	26632
Surr: DNOP	96.2	70-130		%Rec	1	7/28/2016 1:56:28 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/28/2016 12:14:23 PM	26637
Surr: BFB	106	80-120		%Rec	1	7/28/2016 12:14:23 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 12:14:23 PM	26637
Toluene	ND	0.048		mg/Kg	1	7/28/2016 12:14:23 PM	26637
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2016 12:14:23 PM	26637
Xylenes, Total	ND	0.096		mg/Kg	1	7/28/2016 12:14:23 PM	26637
Surr: 4-Bromofluorobenzene	99.3	80-120		%Rec	1	7/28/2016 12:14:23 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3
Project: CoP Huerfano #193
Collection Date: 7/26/2016 5:05:00 PM
Lab ID: 1607D71-003
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1300	93		mg/Kg	10	7/28/2016 3:25:43 PM	26632
Motor Oil Range Organics (MRO)	820	470		mg/Kg	10	7/28/2016 3:25:43 PM	26632
Surr: DNOP	0	70-130	S	%Rec	10	7/28/2016 3:25:43 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	57	9.2		mg/Kg	2	7/29/2016 10:59:49 AM	26637
Surr: BFB	390	80-120	S	%Rec	2	7/29/2016 10:59:49 AM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.046		mg/Kg	2	7/29/2016 10:59:49 AM	26637
Toluene	ND	0.092		mg/Kg	2	7/29/2016 10:59:49 AM	26637
Ethylbenzene	0.15	0.092		mg/Kg	2	7/29/2016 10:59:49 AM	26637
Xylenes, Total	0.33	0.18		mg/Kg	2	7/29/2016 10:59:49 AM	26637
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	2	7/29/2016 10:59:49 AM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP Huerfano #193
Lab ID: 1607D71-004 **Matrix:** SOIL

Client Sample ID: SC-4
Collection Date: 7/26/2016 5:10:00 PM
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	130	9.4		mg/Kg	1	7/29/2016 12:45:21 PM	26632
Motor Oil Range Organics (MRO)	280	47		mg/Kg	1	7/29/2016 12:45:21 PM	26632
Surr: DNOP	85.5	70-130		%Rec	1	7/29/2016 12:45:21 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/28/2016 1:48:33 PM	26637
Surr: BFB	109	80-120		%Rec	1	7/28/2016 1:48:33 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 1:48:33 PM	26637
Toluene	ND	0.047		mg/Kg	1	7/28/2016 1:48:33 PM	26637
Ethylbenzene	ND	0.047		mg/Kg	1	7/28/2016 1:48:33 PM	26637
Xylenes, Total	ND	0.095		mg/Kg	1	7/28/2016 1:48:33 PM	26637
Surr: 4-Bromofluorobenzene	103	80-120		%Rec	1	7/28/2016 1:48:33 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-5
Project: CoP Huerfano #193
Collection Date: 7/26/2016 5:15:00 PM
Lab ID: 1607D71-005
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/28/2016 4:09:23 PM	26632
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2016 4:09:23 PM	26632
Surr: DNOP	102	70-130		%Rec	1	7/28/2016 4:09:23 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/28/2016 2:12:05 PM	26637
Surr: BFB	106	80-120		%Rec	1	7/28/2016 2:12:05 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 2:12:05 PM	26637
Toluene	ND	0.047		mg/Kg	1	7/28/2016 2:12:05 PM	26637
Ethylbenzene	ND	0.047		mg/Kg	1	7/28/2016 2:12:05 PM	26637
Xylenes, Total	ND	0.095		mg/Kg	1	7/28/2016 2:12:05 PM	26637
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/28/2016 2:12:05 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP Huerfano #193
Lab ID: 1607D71-006 **Matrix:** SOIL

Client Sample ID: SC-6
Collection Date: 7/26/2016 5:20:00 PM
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	490	9.9		mg/Kg	1	7/28/2016 4:31:10 PM	26632
Motor Oil Range Organics (MRO)	280	50		mg/Kg	1	7/28/2016 4:31:10 PM	26632
Surr: DNOP	113	70-130		%Rec	1	7/28/2016 4:31:10 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	33	4.8		mg/Kg	1	7/29/2016 11:23:23 AM	26637
Surr: BFB	151	80-120	S	%Rec	1	7/29/2016 11:23:23 AM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/29/2016 11:23:23 AM	26637
Toluene	ND	0.048		mg/Kg	1	7/29/2016 11:23:23 AM	26637
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2016 11:23:23 AM	26637
Xylenes, Total	0.17	0.095		mg/Kg	1	7/29/2016 11:23:23 AM	26637
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	7/29/2016 11:23:23 AM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-7
Project: CoP Huerfano #193
Collection Date: 7/26/2016 5:25:00 PM
Lab ID: 1607D71-007
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	1100	95		mg/Kg	10	7/29/2016 1:42:18 PM	26632
Motor Oil Range Organics (MRO)	540	480		mg/Kg	10	7/29/2016 1:42:18 PM	26632
Surr: DNOP	0	70-130	S	%Rec	10	7/29/2016 1:42:18 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	220	46		mg/Kg	10	7/28/2016 3:52:33 PM	26637
Surr: BFB	289	80-120	S	%Rec	10	7/28/2016 3:52:33 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.23		mg/Kg	10	7/28/2016 3:52:33 PM	26637
Toluene	ND	0.46		mg/Kg	10	7/28/2016 3:52:33 PM	26637
Ethylbenzene	0.66	0.46		mg/Kg	10	7/28/2016 3:52:33 PM	26637
Xylenes, Total	5.0	0.93		mg/Kg	10	7/28/2016 3:52:33 PM	26637
Surr: 4-Bromofluorobenzene	115	80-120		%Rec	10	7/28/2016 3:52:33 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP Huerfano #193
Lab ID: 1607D71-008 **Matrix:** SOIL

Client Sample ID: SC-8
Collection Date: 7/26/2016 5:30:00 PM
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	360	9.7		mg/Kg	1	7/28/2016 5:14:43 PM	26632
Motor Oil Range Organics (MRO)	ND	290		mg/Kg	1	7/28/2016 5:14:43 PM	26632
Surr: DNOP	112	70-130		%Rec	1	7/28/2016 5:14:43 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	24	4.8		mg/Kg	1	7/29/2016 11:46:57 AM	26637
Surr: BFB	326	80-120	S	%Rec	1	7/29/2016 11:46:57 AM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/29/2016 11:46:57 AM	26637
Toluene	ND	0.048		mg/Kg	1	7/29/2016 11:46:57 AM	26637
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2016 11:46:57 AM	26637
Xylenes, Total	0.10	0.095		mg/Kg	1	7/29/2016 11:46:57 AM	26637
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	7/29/2016 11:46:57 AM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-9
Project: CoP Huerfano #193
Collection Date: 7/26/2016 5:35:00 PM
Lab ID: 1607D71-009
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	7/28/2016 5:36:28 PM	26632
Motor Oil Range Organics (MRO)	ND	96		mg/Kg	1	7/28/2016 5:36:28 PM	26632
Surr: DNOP	109	70-130		%Rec	1	7/28/2016 5:36:28 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/28/2016 4:39:47 PM	26637
Surr: BFB	107	80-120		%Rec	1	7/28/2016 4:39:47 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	7/28/2016 4:39:47 PM	26637
Toluene	ND	0.047		mg/Kg	1	7/28/2016 4:39:47 PM	26637
Ethylbenzene	ND	0.047		mg/Kg	1	7/28/2016 4:39:47 PM	26637
Xylenes, Total	ND	0.093		mg/Kg	1	7/28/2016 4:39:47 PM	26637
Surr: 4-Bromofluorobenzene	96.9	80-120		%Rec	1	7/28/2016 4:39:47 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-10
Project: CoP Huerfano #193
Collection Date: 7/26/2016 5:40:00 PM
Lab ID: 1607D71-010
Matrix: SOIL
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	19	10		mg/Kg	1	7/28/2016 5:58:12 PM	26632
Motor Oil Range Organics (MRO)	ND	100		mg/Kg	1	7/28/2016 5:58:12 PM	26632
Surr: DNOP	109	70-130		%Rec	1	7/28/2016 5:58:12 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/28/2016 5:03:24 PM	26637
Surr: BFB	108	80-120		%Rec	1	7/28/2016 5:03:24 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 5:03:24 PM	26637
Toluene	ND	0.049		mg/Kg	1	7/28/2016 5:03:24 PM	26637
Ethylbenzene	ND	0.049		mg/Kg	1	7/28/2016 5:03:24 PM	26637
Xylenes, Total	ND	0.097		mg/Kg	1	7/28/2016 5:03:24 PM	26637
Surr: 4-Bromofluorobenzene	100	80-120		%Rec	1	7/28/2016 5:03:24 PM	26637

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP Huerfano #193
Lab ID: 1607D71-011 **Matrix:** SOIL

Client Sample ID: SC-11
Collection Date: 7/26/2016 5:45:00 PM
Received Date: 7/27/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	7/28/2016 6:19:59 PM	26632
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	7/28/2016 6:19:59 PM	26632
Surr: DNOP	109	70-130		%Rec	1	7/28/2016 6:19:59 PM	26632
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/28/2016 7:00:52 PM	26637
Surr: BFB	107	80-120		%Rec	1	7/28/2016 7:00:52 PM	26637
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/28/2016 7:00:52 PM	26637
Toluene	ND	0.048		mg/Kg	1	7/28/2016 7:00:52 PM	26637
Ethylbenzene	ND	0.048		mg/Kg	1	7/28/2016 7:00:52 PM	26637
Xylenes, Total	ND	0.095		mg/Kg	1	7/28/2016 7:00:52 PM	26637
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/28/2016 7:00:52 PM	26637

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D71**

14-Oct-16

Client: Rule Engineering LLC
Project: CoP Huerfano #193

Sample ID **LCS-26632**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26632**	RunNo: **36050**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1116503** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	96.3	62.6	124			
Surr: DNOP	4.9		5.000		97.5	70	130			

Sample ID **MB-26632**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26632**	RunNo: **36050**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1116504** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Motor Oil Range Organics (MRO)	ND	50								
Surr: DNOP	11		10.00		106	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D71**

14-Oct-16

Client: Rule Engineering LLC

Project: CoP Huerfano #193

Sample ID **1607D71-002AMS**	SampType: **MS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **SC-2**	Batch ID: **26637**			RunNo: **36077**					
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**			SeqNo: **1117348**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	4.6	23.19	0	112	59.3	143			
Surr: BFB	1100		927.6		117	80	120			

Sample ID **1607D71-002AMSD**	SampType: **MSD**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **SC-2**	Batch ID: **26637**			RunNo: **36077**					
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**			SeqNo: **1117349**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.70	0	102	59.3	143	3.01	20	
Surr: BFB	1200		988.1		118	80	120	0	0	

Sample ID **LCS-26637**	SampType: **LCS**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **LCSS**	Batch ID: **26637**			RunNo: **36077**					
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**			SeqNo: **1117363**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	93.5	80	120			
Surr: BFB	1100		1000		113	80	120			

Sample ID **MB-26637**	SampType: **MBLK**			TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID: **PBS**	Batch ID: **26637**			RunNo: **36077**					
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**			SeqNo: **1117364**		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		104	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D71**

14-Oct-16

Client: Rule Engineering LLC

Project: CoP Huerfano #193

Sample ID **1607D71-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-1**	Batch ID: **26637**	RunNo: **36077**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1117600** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9911	0	115	71.5	122			
Toluene	1.1	0.050	0.9911	0	112	71.2	123			
Ethylbenzene	1.1	0.050	0.9911	0	115	75.2	130			
Xylenes, Total	3.4	0.099	2.973	0.05660	113	72.4	131			
Surr: 4-Bromofluorobenzene	1.1		0.9911		113	80	120			

Sample ID **1607D71-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-1**	Batch ID: **26637**	RunNo: **36077**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1117601** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.024	0.9588	0	119	71.5	122	0.358	20	
Toluene	1.1	0.048	0.9588	0	115	71.2	123	0.566	20	
Ethylbenzene	1.1	0.048	0.9588	0	119	75.2	130	0.647	20	
Xylenes, Total	3.4	0.096	2.876	0.05660	117	72.4	131	0.186	20	
Surr: 4-Bromofluorobenzene	1.1		0.9588		114	80	120	0	0	

Sample ID **LCS-26637**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26637**	RunNo: **36077**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1117616** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.96	0.025	1.000	0	96.3	75.3	123			
Toluene	0.94	0.050	1.000	0	94.0	80	124			
Ethylbenzene	0.96	0.050	1.000	0	96.4	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	95.1	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **MB-26637**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26637**	RunNo: **36077**
Prep Date: **7/27/2016**	Analysis Date: **7/28/2016**	SeqNo: **1117617** 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	0.99		1.000		99.2	80	120			

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1607D71 RcptNo: 1

Received by/date: AJ 07/27/16

Logged By: Anne Thorne 7/27/2016 8:00:00 AM

Completed By: Anne Thorne 7/27/2016

Reviewed By: AJ 07/27/16

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	5.3	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr, Suite 205
Farmington, NM 87401

Phone #: (505) 716-2787

email or Fax#: hwoods@ruleengineering.com

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

Accreditation
☐ NELAP ☐ Other

☐ EDD (Type)

Turn-Around Time:
☐ Standard ☒ Rush 3-day TAT

Project Name: CoP Huerfano #193

Project #:

Project Manager: H. Woods

Sampler: H. Woods

On Ice: ☒ Yes ☐ No

Sample Temperature: 5.3 2.1 A

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1607171	BTEX + [illegible] (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / [illegible])	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
7/26/16	1605	Soil	SC-1	(1) 4 oz Glass	Cold	001	X		X									
	1609	Soil	SC-2			002	X		X									
	1705	Soil	SC-3			003	X		X									
	1710	Soil	SC-4			004	X		X									
	1715	Soil	SC-5			005	X		X									
	1720	Soil	SC-6			006	X		X									
	1725	Soil	SC-7			007	X		X									
	1730	Soil	SC-8			008	X		X									
	1735	Soil	SC-9			009	X		X									
	1740	Soil	SC-10			010	X		X									
	1745	Soil	SC-11			011	X		X									

Date	Time	Relinquished by:	Received by:	Date	Time
7/26/16	1937	Heath M. Woods	Christine Walls	7/26/16	1937
7/26/16	1946	Christine Walls	[signature]	07/27/16	0800

Remarks: Direct Bill to ConocoPhillips
WO: 21602970
User: KAITLW
Area Super: Jack Birchfield
ordered by: Lisa Hunter

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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 14, 2016

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

RE: CoP Huerfano #193 OrderNo.: 1607E63

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/28/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued August 02, 2016.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1607E63**
Date Reported: **10/14/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP Huerfano #193
Lab ID: 1607E63-001 **Matrix:** SOIL

Client Sample ID: SC-12
Collection Date: 7/27/2016 12:40:00 PM
Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	12	9.1		mg/Kg	1	8/1/2016 2:05:28 PM	26674
Motor Oil Range Organics (MRO)	ND	45		mg/Kg	1	8/1/2016 2:05:28 PM	26674
Surr: DNOP	93.8	70-130		%Rec	1	8/1/2016 2:05:28 PM	26674
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/29/2016 2:08:30 PM	26668
Surr: BFB	104	49.4-163		%Rec	1	7/29/2016 2:08:30 PM	26668
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/29/2016 2:08:30 PM	26668
Toluene	ND	0.048		mg/Kg	1	7/29/2016 2:08:30 PM	26668
Ethylbenzene	ND	0.048		mg/Kg	1	7/29/2016 2:08:30 PM	26668
Xylenes, Total	ND	0.097		mg/Kg	1	7/29/2016 2:08:30 PM	26668
Surr: 4-Bromofluorobenzene	90.9	80-120		%Rec	1	7/29/2016 2:08:30 PM	26668

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-13
Project: CoP Huerfano #193
Collection Date: 7/27/2016 12:45:00 PM
Lab ID: 1607E63-002
Matrix: SOIL
Received Date: 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	31	9.7		mg/Kg	1	8/1/2016 2:49:38 PM	26674
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/1/2016 2:49:38 PM	26674
Surr: DNOP	93.4	70-130		%Rec	1	8/1/2016 2:49:38 PM	26674
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	7/29/2016 3:19:05 PM	26668
Surr: BFB	97.6	49.4-163		%Rec	1	7/29/2016 3:19:05 PM	26668
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/29/2016 3:19:05 PM	26668
Toluene	ND	0.047		mg/Kg	1	7/29/2016 3:19:05 PM	26668
Ethylbenzene	ND	0.047		mg/Kg	1	7/29/2016 3:19:05 PM	26668
Xylenes, Total	ND	0.095		mg/Kg	1	7/29/2016 3:19:05 PM	26668
Surr: 4-Bromofluorobenzene	91.4	80-120		%Rec	1	7/29/2016 3:19:05 PM	26668

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-14
Project: CoP Huerfano #193
Collection Date: 7/27/2016 1:30:00 PM
Lab ID: 1607E63-003 **Matrix:** SOIL **Received Date:** 7/28/2016 7:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **KJH**	
Diesel Range Organics (DRO)	300	94		mg/Kg	10	8/1/2016 3:33:48 PM	26674
Motor Oil Range Organics (MRO)	ND	470		mg/Kg	10	8/1/2016 3:33:48 PM	26674
Surr: DNOP	0	70-130	S	%Rec	10	8/1/2016 3:33:48 PM	26674
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	7/29/2016 3:42:46 PM	26668
Surr: BFB	140	49.4-163		%Rec	1	7/29/2016 3:42:46 PM	26668
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.023		mg/Kg	1	7/29/2016 3:42:46 PM	26668
Toluene	ND	0.046		mg/Kg	1	7/29/2016 3:42:46 PM	26668
Ethylbenzene	ND	0.046		mg/Kg	1	7/29/2016 3:42:46 PM	26668
Xylenes, Total	ND	0.093		mg/Kg	1	7/29/2016 3:42:46 PM	26668
Surr: 4-Bromofluorobenzene	98.2	80-120		%Rec	1	7/29/2016 3:42:46 PM	26668

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607E63**

14-Oct-16

Client: Rule Engineering LLC

Project: CoP Huerfano #193

Sample ID **MB-26674**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26674**	RunNo: **36082**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1117403** 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	9.2		10.00		91.7	70	130			

Sample ID **LCS-26674**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26674**	RunNo: **36121**
Prep Date: **7/28/2016**	Analysis Date: **8/1/2016**	SeqNo: **1118988** 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	85.2	62.6	124			
Surr: DNOP	4.8		5.000		96.4	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607E63**

14-Oct-16

Client: Rule Engineering LLC
Project: CoP Huerfano #193

Sample ID **MB-26668**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118419** 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	920		1000		92.3	49.4	163			

Sample ID **LCS-26668**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118420** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80	120			
Surr: BFB	1100		1000		108	49.4	163			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607E63**

14-Oct-16

Client: Rule Engineering LLC

Project: CoP Huerfano #193

Sample ID **MB-26668**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118455** 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	0.87		1.000		87.1	80	120			

Sample ID **LCS-26668**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118456** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.90	0.025	1.000	0	90.2	75.3	123			
Toluene	0.92	0.050	1.000	0	92.4	80	124			
Ethylbenzene	0.99	0.050	1.000	0	99.2	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	98.9	83.9	122			
Surr: 4-Bromofluorobenzene	0.97		1.000		97.3	80	120			

Sample ID **1607E63-001AMS**	SampType: **MS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-12**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118461** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.025	0.9891	0	114	71.5	122			
Toluene	1.1	0.049	0.9891	0	115	71.2	123			
Ethylbenzene	1.2	0.049	0.9891	0	120	75.2	130			
Xylenes, Total	3.6	0.099	2.967	0	120	72.4	131			
Surr: 4-Bromofluorobenzene	0.98		0.9891		99.2	80	120			

Sample ID **1607E63-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **SC-12**	Batch ID: **26668**	RunNo: **36097**
Prep Date: **7/28/2016**	Analysis Date: **7/29/2016**	SeqNo: **1118462** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.1	0.023	0.9294	0	116	71.5	122	4.21	20	
Toluene	1.1	0.046	0.9294	0	117	71.2	123	4.58	20	
Ethylbenzene	1.1	0.046	0.9294	0	123	75.2	130	3.63	20	
Xylenes, Total	3.4	0.093	2.788	0	123	72.4	131	3.78	20	
Surr: 4-Bromofluorobenzene	0.90		0.9294		97.3	80	120	0	0	

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

Sample Log-In Check List

Client Name: RULE ENGINEERING LL Work Order Number: 1607E63 RcptNo: 1

Received by/date: 07/28/16

Logged By: Lindsay Mangin 7/28/2016 7:30:00 AM

Completed By: Lindsay Mangin 7/28/2016 9:45:56 AM

Reviewed By: JO 7/28/16

Chain of Custody

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

Log In

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

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

Adjusted? _____

Checked by: _____

Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.7	Good	Yes			

Chain-of-Custody Record

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Client:	Rule Engineering, LLC
Mailing Address:	501 Airport Drive, Suite 205
	Farmington, NM 87401
Phone #:	(505) 716-2787
Email or Fax#:	hwoods@ruleengineering.com
QA/QC Package:	☐ Standard ☐ Level 4 (Full Validation)
Accreditation	☐ NELAP ☐ Other
EDD (Type)	

Turn-Around Time:	☐ Standard ☒ Rush 3-Day
Project Name:	Col Hilerfano #193
Project #:	
Project Manager:	H. Woods
Sampler:	H. Woods
On Ice:	☒ Yes ☐ No
Sample Temperature:	2.7-1.0=1.7

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1607E63	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / MRO)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
7/16	1240	Soil	SC-12	(1) 4oz Glass	Cold	-001		X									
7/16	1245	Soil	SC-13	(1) 4oz Glass	Cold	-002		X									
7/16	1330	Soil	SC-14	(1) 4oz Glass	Cold	-003		X									

	Time:	Relinquished by:	Received by:	Date	Time
7/16	1640	Heather M. Woods	Christie Walker	7/27/16	1640
7/16	1855	Christie Walker		07/28/16	0720

Remarks:
Direct Bill to ConocoPhillips
WO: 216 02970
User: KAITLW
Super: Jack Birchfield
Ordered by: Lisa Hunter

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.

HALL ENVIRONMENTAL ANALYSIS LABORATORY

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

October 14, 2016

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

RE: Huerfano 193 OrderNo.: 1608193

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 8/4/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued August 05, 2016.

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-3R
Project: Huerfano 193
Collection Date: 8/3/2016 2:40:00 PM
Lab ID: 1608193-001
Matrix: MEOH (SOIL)
Received Date: 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	90	9.5		mg/Kg	1	8/4/2016 1:14:17 PM	26779
Motor Oil Range Organics (MRO)	150	47		mg/Kg	1	8/4/2016 1:14:17 PM	26779
Surr: DNOP	109	70-130		%Rec	1	8/4/2016 1:14:17 PM	26779
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	3.8		mg/Kg	1	8/4/2016 12:09:52 PM	26763
Surr: BFB	97.5	49.4-163		%Rec	1	8/4/2016 12:09:52 PM	26763
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.019		mg/Kg	1	8/4/2016 12:09:52 PM	26763
Toluene	ND	0.038		mg/Kg	1	8/4/2016 12:09:52 PM	26763
Ethylbenzene	ND	0.038		mg/Kg	1	8/4/2016 12:09:52 PM	26763
Xylenes, Total	ND	0.075		mg/Kg	1	8/4/2016 12:09:52 PM	26763
Surr: 4-Bromofluorobenzene	90.4	80-120		%Rec	1	8/4/2016 12:09:52 PM	26763

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

Qualifiers:

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

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Client Sample ID: SC-7R
Project: Huerfano 193
Collection Date: 8/3/2016 2:45:00 PM
Lab ID: 1608193-002
Matrix: MEOH (SOIL)
Received Date: 8/4/2016 6:30:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **JME**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/4/2016 12:09:27 PM	26779
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/4/2016 12:09:27 PM	26779
Surr: DNOP	108	70-130		%Rec	1	8/4/2016 12:09:27 PM	26779
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.1		mg/Kg	1	8/4/2016 12:33:28 PM	26763
Surr: BFB	98.1	49.4-163		%Rec	1	8/4/2016 12:33:28 PM	26763
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.021		mg/Kg	1	8/4/2016 12:33:28 PM	26763
Toluene	ND	0.041		mg/Kg	1	8/4/2016 12:33:28 PM	26763
Ethylbenzene	ND	0.041		mg/Kg	1	8/4/2016 12:33:28 PM	26763
Xylenes, Total	ND	0.083		mg/Kg	1	8/4/2016 12:33:28 PM	26763
Surr: 4-Bromofluorobenzene	89.5	80-120		%Rec	1	8/4/2016 12:33:28 PM	26763

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

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608193**

14-Oct-16

Client: Rule Engineering LLC

Project: Huerfano 193

Sample ID **MB-26779**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26779**	RunNo: **36220**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122005** 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	9.9		10.00		98.8	70	130			

Sample ID **LCS-26779**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26779**	RunNo: **36220**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122006** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	48	10	50.00	0	97.0	62.6	124			
Surr: DNOP	5.2		5.000		104	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608193**

14-Oct-16

Client: Rule Engineering LLC

Project: Huerfano 193

Sample ID **MB-26763**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26763**	RunNo: **36215**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122450** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	970		1000		97.0	49.4	163			

Sample ID **LCS-26763**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26763**	RunNo: **36215**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122452** 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	102	80	120			
Surr: BFB	1000		1000		105	49.4	163			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608193**

14-Oct-16

Client: Rule Engineering LLC

Project: Huerfano 193

Sample ID **MB-26763**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26763**	RunNo: **36215**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122473** 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	0.92		1.000		91.5	80	120			

Sample ID **LCS-26763**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26763**	RunNo: **36215**
Prep Date: **8/3/2016**	Analysis Date: **8/4/2016**	SeqNo: **1122474** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.94	0.025	1.000	0	94.4	75.3	123			
Toluene	0.92	0.050	1.000	0	91.9	80	124			
Ethylbenzene	0.96	0.050	1.000	0	95.8	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.4	83.9	122			
Surr: 4-Bromofluorobenzene	0.95		1.000		95.0	80	120			

Qualifiers:

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

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Website: www.hallenvironmental.com

Sample Log-In Check List

Client Name: **RULE ENGINEERING LL** Work Order Number: **1608193** RcptNo: 1

Received by/date: AG 08/04/16
Logged By: **Ashley Gallegos** 8/4/2016 6:30:00 AM AG
Completed By: **Ashley Gallegos** 8/4/2016 6:57:48 AM AG
Reviewed By: aJ 08/4/16

Chain of Custody

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

Log In

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

Special Handling (if applicable)

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

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

17. Additional remarks:

18. **Cooler Information**

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.5	Good	Yes			

Chain-of-Custody Record

Client: Rule Engineering, LLC

Mailing Address: 501 Airport Dr. Suite 205 Farmington, NM 87401

Phone #: 505 793 9486

Email or Fax#: jvalder@ruleengineering.com

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

Accreditation: ☑ NELAP ☐ Other

EDD (Type)

Turn-Around Time: ☐ Standard ☑ Rush Same Day

Project Name: Huerfano #193

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 2.5

HALL ENVIRONMENTAL ANALYSIS LABORATORY

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

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

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608193	BTEX + ~~MTBE~~ + TMB's (8021)	BTEX + MTBE + TPH (Gas only)	TPH 8015B (GRO / DRO / ~~MRO~~)	TPH (Method 418.1)	EDB (Method 504.1)	PAH's (8310 or 8270 SIMS)	RCRA 8 Metals	Anions ($F, Cl, NO_3, NO_2, PO_4, SO_4$)	8081 Pesticides / 8082 PCB's	8260B (VOA)	8270 (Semi-VOA)	Air Bubbles (Y or N)
8/3/16	1440	Soil	SC-3R	4oz Glass	Cold	-001	X		X									
8/3/16	1445	Soil	SC-7R	4oz Glass	Cold	-002	X		X									

Date: 8/3/16 Time: 1705 Relinquished by: [signature]

Received by: [signature] Date Time: 8/3/16 1705

Date: 8/4/16 Time: 1904 Relinquished by: [signature]

Received by: [signature] Date Time: 08/04/16 0630

Remarks:
Direct Bill to ConocoPhillips
WO: 216029 70
Approver: KAITLW
Area Supervisor: Jack Birchfield
Ordered by: Lisa Hunter

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.