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

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 in accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company ConocoPhillips Company	Contact Clara Cardoza
Address 1001 Arizona St	Telephone No. 505/215/7336
Facility Name San Juan Gas Plant	Facility Type Gas Processing Plant

Surface Owner Private	Mineral Owner	API No. N/A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	14	29N	11W					San Juan

Latitude 36.7316 **Longitude** -107.9678

NATURE OF RELEASE

Type of Release Historic	Volume of Release TBD	Volume Recovered TBD
Source of Release Pumps	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

OIL CONS. DIV DIST. 3
AUG 03 2016

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
During demolition of EPBC (ethane propane butane condensate) pump skids at the plant site, historic contamination was encountered. ConocoPhillips Company (COPC) continued demolition/excavation segregating visibly contaminated soil to be land farmed offsite.

Describe Area Affected and Cleanup Action Taken.*
There are three affected areas, which are hereafter referred to as the west, center and east areas. In the west area, COPC continued excavation/demolition until visibly clean soil was reached both vertically and horizontally. The center area of the excavation has been dug out approximately 13' and visibly clean soil has not been reached. In the east area, there is visible staining under a concrete slab that is used for plant operations, and COPC does not intend to excavate under that slab at this time. NMOCD was contacted and witnessed sampling in the visibly clean west area (initial 5-point composite sampling was completed on June 30, 2016). NMOCD granted approval to leave the center and east areas in current condition pending further sampling. COPC has contracted an environmental company for delineation in the center and east areas with a geo-probe, and that work is tentatively scheduled for August 8, 2016.

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: Clara M. Cardoza

Printed Name: Clara M Cardoza

Title: Environmental Coordinator

E-mail Address: clara.m.cardoza@cop.com

Date: Phone:505-215-7336

OIL CONSERVATION DIVISION

Approved by Environmental Specialist:

Approval Date: 8/22/16 Expiration Date:

Conditions of Approval:
Operator must Fully Delineate Release Both Horizontally and Vertically. Test Soil's For Any TPH to Include (GRO-DRO-MRO)

Attached ☐

* Attach Additional Sheets If Necessary

#NCS1623548612

52

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
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1000 Rio Brazos Road, Aztec, NM 87410
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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.
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Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company ConocoPhillips Company	Contact Clara Cardoza
Address 1001 Arizona St	Telephone No. 505/215/7336
Facility Name San Juan Gas Plant	Facility Type Gas Processing Plant

Surface Owner Private	Mineral Owner	API No. N/A

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	14	29N	11W					San Juan

OIL CONS. DIV DIST. 3

DEC 15 2016

Latitude 36.7316 **Longitude** -107.9678

NATURE OF RELEASE

Type of Release Historic	Volume of Release Unknown	Volume Recovered Zero
Source of Release Pumps	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
During demolition of EPBC (ethane propane butane condensate) pump skids at the plant site, historic contamination was encountered. ConocoPhillips Company (COPC) excavated an area of approximately 35 ft x 35 ft to various depths until visibly clean soil was reached.

Describe Area Affected and Cleanup Action Taken.*
There are three affected areas, which are hereafter referred to as the west, center and east areas. In the west area, COPC excavated until visibly clean soil was reached both vertically and horizontally. The center area of the excavation was dug out approximately 13' until visibly clean soil was reached. In the east area, there is visible staining under a concrete slab that is used for plant operations, and COPC does not excavate under the slab to maintain the integrity of the slab and protect the equipment that is still in service. A Geoprobe® was used in the excavated to ensure cleanup standards were met. Outside of the excavated area hand-auger was utilized just north of the excavation and east to determine the reach of the historic contamination. All walls of the excavation and hand-auger samples were clear and met the NMOCD cleanup standards for the site ranking of 30. All cleanup actions are described in full detail in the attached report prepared by Rule Engineering, LLC.

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: Clara M. Cardoza	OIL CONSERVATION DIVISION Approved by Environmental Specialist:
Printed Name: Clara M Cardoza	
Title: Environmental Coordinator	Approval Date: 1/23/17 Expiration Date:
E-mail Address: clara.m.cardoza@cop.com	Conditions of Approval: Operator Will Investigate Any Further Impacts under Concrete SLAB if Removed or Demo P&A. Attached ☒
Date: December 13, 2016 Phone:505-215-7336	

* Attach Additional Sheets If Necessary

#NCS1623548612

Smith, Cory, EMNRD

From: Smith, Cory, EMNRD
Sent: Monday, January 23, 2017 9:45 AM
To: 'Cardoza, Clara M'
Cc: Fields, Vanessa, EMNRD
Subject: RE: Final Report San Juan Gas Plant

Clara,

I have approved COPC Final C-141 with the following conditions of Approval:

- COPC will investigate any remaining contamination below the concrete slabs if/when they are removed or during decommission.

If you have any additional questions please give me a call.

Cory Smith
Environmental Specialist
Oil Conservation Division
Energy, Minerals, & Natural Resources
1000 Rio Brazos, Aztec, NM 87410
(505)334-6178 ext 115
cory.smith@state.nm.us

From: Cardoza, Clara M [mailto:Clara.M.Cardoza@conocophillips.com]
Sent: Tuesday, December 13, 2016 9:05 AM
To: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Cc: Fields, Vanessa, EMNRD <Vanessa.Fields@state.nm.us>
Subject: Final Report San Juan Gas Plant

Cory,
Attached please find the final C-141 and remediation report prepared by Rule Engineering for the historic contamination at the San Juan Gas Plant. Should you have any questions or require additional information please contact me at the number listed below. A hard copy of the report will follow in the mail.

Happy holidays,

Clara M Cardoza
San Juan Asset/Rockies BU
505/326/9710 (O)
505/215/7336 (C)

San Juan Gas Plant Release Report

Unit Letter D, Section 14, Township 29 North, Range 11 West
San Juan County, New Mexico

October 31, 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
San Juan Gas Plant 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 31, 2016

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Tables

Figures

Appendices

1.0 Introduction

The ConocoPhillips San Juan Gas Plant release site is located in Unit Letter D, Section 14, Township 29 North, Range 11 West, in San Juan County, New Mexico. The historical release was discovered beneath a concrete slab during construction operations at the site.

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	San Juan Gas Plant		
Site Location Description	Unit Letter D, Section 14, Township 29 North, Range 11 West		
Release GPS Location	N36.73111 and W107.96719	***Release Source***	Historical (beneath concrete slab)
Land Jurisdiction	Private		
NMOCD Site Rank	30		
Distance to Nearest Surface Water	The San Juan Gas Plant's stormwater detention pond is located approximately 390 feet to the southwest and Citizens Ditch is located approximately 575 feet to the southwest		
Estimated Depth to Groundwater	Estimated to be less than 50 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 30 (Table 1).

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.

Depth to groundwater at the site is estimated to be less than 50 feet bgs based on the reported depth to water of 10 feet bgs for water well SJ 01426 located approximately 1,700 feet to the southeast at a similar elevation as the release location.

The San Juan Gas Plant's stormwater detention pond is located approximately 390 feet southwest of the release location and Citizens Ditch is located approximately 575 feet to the southwest.

Based on the ranking score of 30, 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 100 mg/kg total petroleum hydrocarbons (TPH). New Mexico Environment Department (NMED) Soil Screening Levels (SSL) for Industrial Use apply for metal concentrations in remediated soils at the site and include: 21.5 mg/kg arsenic, 255,000 mg/kg barium, 1,100 mg/kg cadmium, 800 mg/kg lead, 6,490 mg/kg selenium, 6,490 mg/kg silver, and 112 mg/kg mercury.

4.0 Field Activities

Following the removal of the portion of the concrete slab associated with the site construction scheduled for demolition and completion of the excavation of impacted soils, Rule Engineering, LLC (Rule) personnel collected three soils samples (SC-1 through SC-3) from the sidewalls of the excavation on July 25, 2016. The excavation measured approximately 35 feet by 35 feet and sloped downwards from the original ground surface in the southwest corner to 10 feet in depth in the northeast corner. To protect neighboring concrete slabs and equipment from damage by further excavation, ConocoPhillips was authorized to backfill the excavation with clean, imported material before continued horizontal and vertical delineation. Excavated soil was transported to Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation.

On August 8, 2016, three soil borings (SB-1 through SB-3) were advanced in and near the excavation area utilizing a Geoprobe® operated by Kyvek Energy Services, Inc. Lithology encountered in the borings consisted of fill material underlain by interbedded sandy clay and clayey sand to the total depths of the borings ranging from approximately 8 to 13.5 feet bgs. Staining and odor was only observed in soil boring SB-1 which is located in the central portion of the remedial excavation at depths from 10 to 12 feet bgs.

On August 23, 2016, two hand-auger soil borings were advanced. Soil boring AB-1 was advanced on the west side of the concrete slab and soil boring AB-2 was advanced to the north of the release area as close as permanent equipment in that area would allow. Soil borings AB-1 and AB-2 were advanced to total depths of approximately 8 and 12 feet, respectively, and the lithology encountered in these soil borings was similar to the previous borings. No staining or odor was observed in either hand-auger boring.

An aerial map showing the excavation and boring locations is included as Figure 2.

5.0 Soil Sampling

Rule collected confirmation soil samples from the excavation sidewalls and the soil borings at 1 to 2 foot intervals. Soil samples were not collected from the upper ten feet of soil borings SB-1 and SB-2 located in the backfilled excavation area.

Field screening was not performed for excavation confirmation samples SC-1 through SC-3. A portion of each soil boring sample field screened for volatile organic compounds (VOCs) and selected samples were analyzed for TPH. Field screening for VOC vapors was conducted with a photoionization detector (PID). Prior to field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field analysis for TPH was conducted for selected samples per United States Environmental Protection Agency (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. Selected samples were analyzed for BTEX per USEPA Method 8021B, TPH per USEPA Method 8015M/D, mercury per USEPA Method 7471, and/or soil metals per USEPA Method 8010B.

Field screening and laboratory analytical results are summarized in Tables 2 and 3. The analytical laboratory reports are included in Appendix A.

6.0 Field Screening and Results

Field screening was not performed for excavation confirmation samples SC-1 through SC-3. Field screening results for samples collected from soil borings SB-1 through SB-3, AB-1, and AB-2 indicated VOC concentrations ranging from 0.4 ppm to 7.0 ppm. Field TPH results for selected samples collected from soil borings SB-1 through SB-3, AB-1, and AB-2 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to 27.1 mg/kg. Field screening results are summarized in Table 2.

7.0 Laboratory Analytical Results

Laboratory analytical results for the excavation confirmation samples (SC-1 through SC-3) and soil boring samples (SB-1 through SB-3, AB-1, and AB-2) reported the benzene, total BTEX, and TPH concentrations below laboratory reporting limits, except for excavation confirmation sample SC-1, which reported a TPH as mineral oil range organics (MRO) concentration of 130 mg/kg. The laboratory reporting limits for benzene, total BTEX, and TPH are all below the applicable NMOCD action levels. The TPH concentration of 130 mg/kg in excavation confirmation sample SC-1 exceeds the NMOCD action level of 100 mg/kg for a site rank of 10. Laboratory analytical results for soil metals indicate concentrations below the NMED SSL for Industrial Use for all three samples analyzed (SC-1 through SC-3).

Laboratory analytical results are summarized in Tables 2 and 3. The analytical laboratory reports are included in Appendix A.

8.0 Conclusions

The ConocoPhillips San Juan Gas Plant release site is located in Unit Letter D, Section 14, Township 29 North, Range 11 West, in San Juan County, New Mexico. The historical release was discovered beneath a concrete slab during construction operations at the site. Following the excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-3 were collected from the sidewalls excavation which measured approximately 35 feet by 35 feet with a base sloping downwards from the ground surface in the southwest corner to approximately 10 feet in depth in the northeast corner. Laboratory analytical results for confirmation sample SC-1 associated with the east sidewall of the excavation reported a TPH as MRO concentration of 130 mg/kg, which exceeds the NMOCD action level for a site rank of 30. Excavated soil was transported to Envirotech Landfarm and the excavation was backfilled with clean, imported soils to address safety concerns and protect the foundations of neighboring equipment.

Soil borings SB-1 through SB-3, AB-1, and AB-2 were advanced to assess soils left in place at the base of the recently backfilled excavation and to assess potential migration of contaminates remaining beneath the neighboring concrete slab to the east of the excavation. Laboratory analysis of soil samples collected form the soil borings was utilized to confirm field screening results that no benzene, total BTEX, TPH, or soil metal concentrations were reported for the soil borings in excess of NMOCD action levels and NMED SSL for Industrial Use.

Based on field screening and laboratory analytical results of the soil samples collected from the excavation and soil borings, no further work is recommended at this time. However, soils remaining in place beneath the presently used concrete slab to the east of the excavation location should be assessed during future equipment modifications or as part of decommissioning the San Juan Gas Plant facility.

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. Field Screening and Laboratory Analytical Results
ConocoPhillips
San Juan Gas Plant
San Juan County, New Mexico

Sample ID	Date	Sample Depth (ft bgs)	Field Screening		Laboratory Analytical Results				
			VOCs* (PID) (ppm)	TPH* (418.1) (mg/kg)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)	TPH - MRO (mg/kg)
NMOCD Action Levels**			**100**	**100**	**10**	**50**	**100**		
SC-1	7/25/2016	0 to 10	--	--	<0.024	<0.217	<4.8	<9.8	**130**
SC-2	7/25/2016	0 to 10	--	--	<0.024	<0.220	<4.9	<9.9	<49
SC-3	7/25/2016	0 to 10	--	--	<0.024	<0.216	<4.8	<9.9	<49
SB-1	8/8/16	10 to 11	7.0	<20.0	--	--	--	--	--
		11 to 12	6.7	20.0	<0.024	<0.215	<4.8	<9.8	<49
		12.5 to 13.5	1.0	<20.0	--	--	--	--	--
SB-2	8/8/16	10 to 11	1.0	--	--	--	--	--	--
		11 to 12	1.6	27.1	<0.024	<0.216	<4.8	<9.6	<48
SB-3	8/8/16	1.5 to 2.5	1.8	20.0	<0.024	<0.216	<4.8	<9.5	<48
		3 to 4	1.5	--	--	--	--	--	--
		4.5 to 5.5	2.7	<20.0	--	--	--	--	--
		7 to 8	2.6	--	--	--	--	--	--
AB-1	8/23/16	0.5	3.0	--	<0.024	<0.212	<4.7	<9.8	<49
		1	1.0	--	--	--	--	--	--
		2	1.5	--	--	--	--	--	--
		3	0.8	--	--	--	--	--	--
		4	1.3	--	--	--	--	--	--
		5	0.9	--	--	--	--	--	--
		6	0.6	--	--	--	--	--	--
		8	0.5	--	<0.025	<0.224	<5.0	<10	<50

Table 1. Field Screening and Laboratory Analytical Results
ConocoPhillips
San Juan Gas Plant
San Juan County, New Mexico

Sample ID	Date	Sample Depth (ft bgs)	Field Screening		Laboratory Analytical Results				
			VOCs* (PID) (ppm)	TPH* (418.1) (mg/kg)	Benzene (mg/kg)	Total BTEX (mg/kg)	TPH - GRO (mg/kg)	TPH - DRO (mg/kg)	TPH - MRO (mg/kg)
NMOCD Action Levels**			100	100	10	50	100		
AB-2	8/23/16	1	0.5	--	--	--	--	--	--
		2	0.5	--	--	--	--	--	--
		3	1.0	--	--	--	--	--	--
		4	0.4	--	--	--	--	--	--
		5	0.7	--	--	--	--	--	--
		6	1.1	--	--	--	--	--	--
		8	1.2	--	<0.023	<0.211	<4.7	<9.7	<48
		10	0.5	--	--	--	--	--	--
		12	1.4	--	<0.023	<0.207	<4.6	<9.9	<49

Notes: ft bgs - feet below ground surface
VOCs - volatile organic compounds
PID - photo-ionization detector
ppm - parts per million
mg/kg - milligrams/kilograms
BTEX - benzene, toluene, ethylbenzene, and xylenes
* field results
**NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)
TPH - total petroleum hydrocarbons
GRO - gasoline range organics
DRO - diesel range organics
MRO - mineral oil range organics

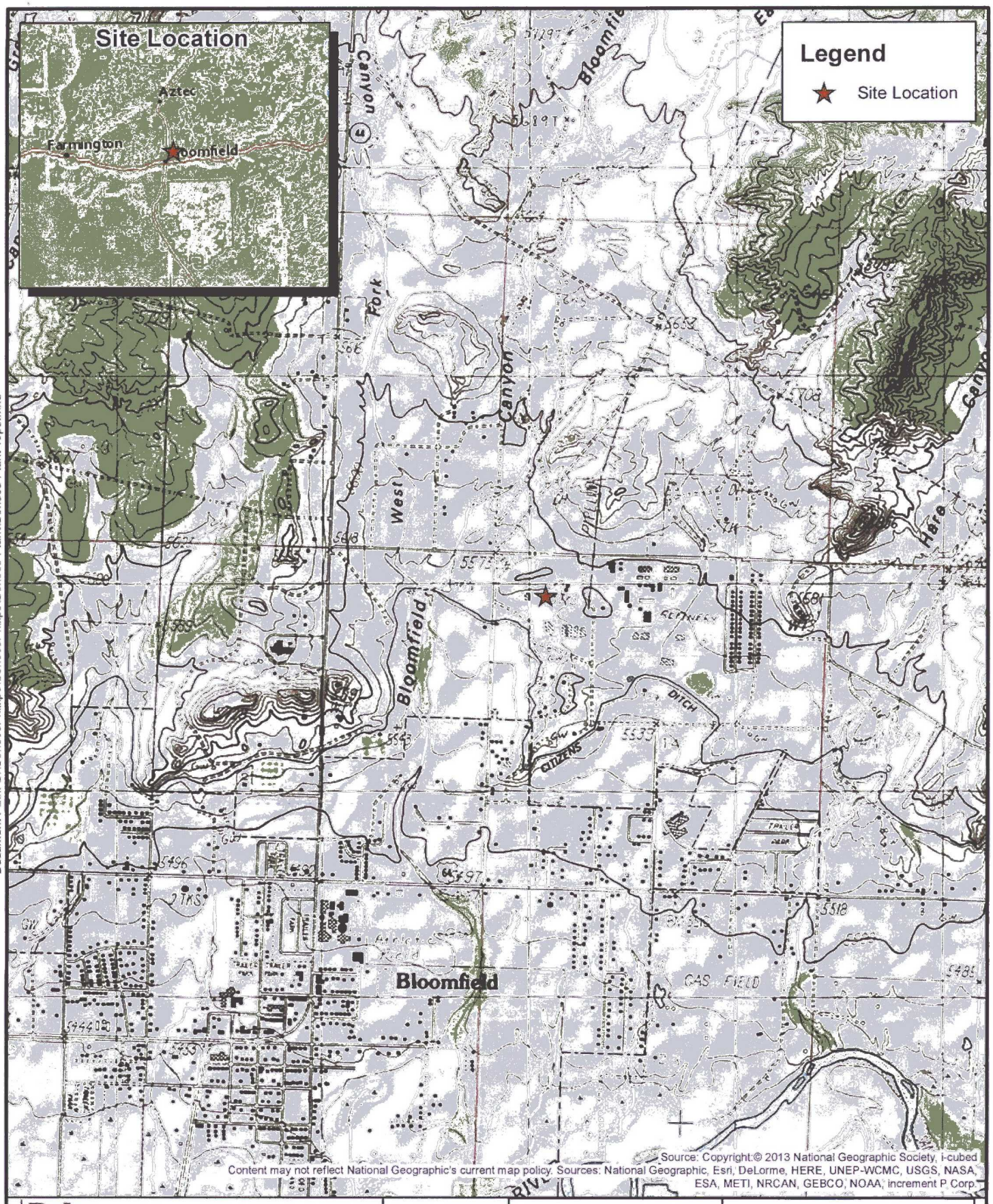
Table 2. Laboratory Analytical Results - Metals
ConocoPhillips
San Juan Gas Plant
San Juan County, New Mexico

Sample ID	Date	Sample Depth (feet)	Laboratory Analytical Results							
			Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Mercury (mg/kg)
NMED Soil Screening Levels for Industrial Use*			**21.5**	**255,000**	**1,110**	**505**	**800**	**6,490**	**6,490**	**112**
SC-1	7/25/2016	0 to 10	<2.5	180	1.1	11	10	3.6	2.0	<0.033
SC-2	7/25/2016	0 to 10	<2.5	170	<0.099	2.3	2.1	<2.5	<0.25	<0.033
SC-3	7/25/2016	0 to 10	<2.5	95	<0.099	2.4	2.5	<2.5	<0.25	<0.032

Notes: mg/kg - milligrams/kilogram

*Per New Mexico Environment Department Risk Assessment Guidance for Investigatons and Remediation (July 2015)

Figures



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Rule Engineering, LLC
Solutions to Regulations for Industry

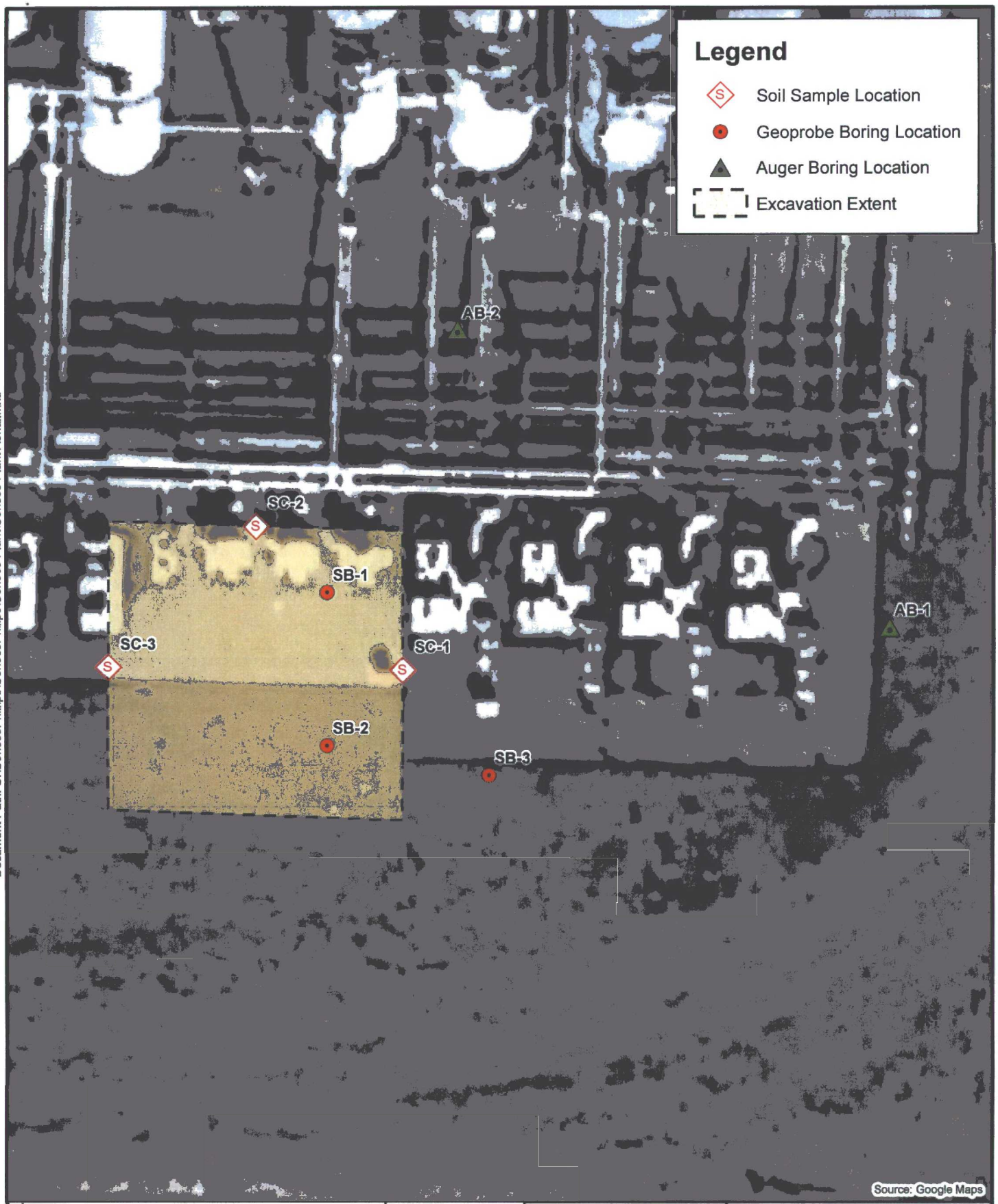
0 0.2 0.4 0.8 Miles

Bloomfield Quadrangle
1:24,000

ConocoPhillips

D-S14-T29N-R11W
N36.73111, W107.96719
San Juan County, NM

Figure 1
Topographic Site Map
San Juan Gas Plant



Document Path: U:\ConocoPhillips\ConocoPhillips\Conoco Plant\Conoco Plant Aerial.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

0 4.75 9.5 19 28.5 38 Feet

1 inch = 15 feet

ConocoPhillips

D-S14-T29N-R11W
N36.73111, W107.96719
San Juan County, NM

Figure 2
Aerial Site Map
San Juan Gas Plant

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

August 09, 2016

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

RE: SJGP OrderNo.: 1607D04

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 7/26/2016 for the analyses presented in the following report.

This report is a revised report and it replaces the original report issued August 04, 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-2
Project: SJGP
Collection Date: 7/25/2016 3:05:00 PM
Lab ID: 1607D04-001 **Matrix:** SOIL **Received Date:** 7/26/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	7/27/2016 7:32:13 AM	26609
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	2.5		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Barium	170	0.099		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Cadmium	ND	0.099		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Chromium	2.3	0.30		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Lead	2.1	0.25		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Selenium	ND	2.5		mg/Kg	1	7/27/2016 11:43:46 AM	26608
Silver	ND	0.25		mg/Kg	1	7/27/2016 11:43:46 AM	26608
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/28/2016 6:41:56 PM	26603
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/28/2016 6:41:56 PM	26603
Surr: DNOP	111	70-130		%Rec	1	7/28/2016 6:41:56 PM	26603
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.9		mg/Kg	1	7/27/2016 2:48:30 PM	26606
Surr: BFB	104	80-120		%Rec	1	7/27/2016 2:48:30 PM	26606
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/27/2016 2:48:30 PM	26606
Toluene	ND	0.049		mg/Kg	1	7/27/2016 2:48:30 PM	26606
Ethylbenzene	ND	0.049		mg/Kg	1	7/27/2016 2:48:30 PM	26606
Xylenes, Total	ND	0.098		mg/Kg	1	7/27/2016 2:48:30 PM	26606
Surr: 4-Bromofluorobenzene	98.8	80-120		%Rec	1	7/27/2016 2:48:30 PM	26606

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: SJGP
Lab ID: 1607D04-002 **Matrix:** SOIL

Client Sample ID: SC-3
Collection Date: 7/25/2016 3:15:00 PM
Received Date: 7/26/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.032		mg/Kg	1	7/27/2016 7:34:03 AM	26609
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	2.5		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Barium	95	0.099		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Cadmium	ND	0.099		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Chromium	2.4	0.30		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Lead	2.5	0.25		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Selenium	ND	2.5		mg/Kg	1	7/27/2016 11:45:37 AM	26608
Silver	ND	0.25		mg/Kg	1	7/27/2016 11:45:37 AM	26608
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.9		mg/Kg	1	7/27/2016 5:27:27 PM	26603
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	7/27/2016 5:27:27 PM	26603
Surr: DNOP	75.0	70-130		%Rec	1	7/27/2016 5:27:27 PM	26603
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/27/2016 3:12:02 PM	26606
Surr: BFB	105	80-120		%Rec	1	7/27/2016 3:12:02 PM	26606
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/27/2016 3:12:02 PM	26606
Toluene	ND	0.048		mg/Kg	1	7/27/2016 3:12:02 PM	26606
Ethylbenzene	ND	0.048		mg/Kg	1	7/27/2016 3:12:02 PM	26606
Xylenes, Total	ND	0.096		mg/Kg	1	7/27/2016 3:12:02 PM	26606
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	7/27/2016 3:12:02 PM	26606

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-1
Project: SJGP
Collection Date: 7/25/2016 3:00:00 PM
Lab ID: 1607D04-003 **Matrix:** SOIL **Received Date:** 7/26/2016 7:50:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	7/27/2016 7:35:54 AM	26609
EPA METHOD 6010B: SOIL METALS						Analyst: **MED**	
Arsenic	ND	2.5		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Barium	180	0.099		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Cadmium	1.1	0.099		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Chromium	11	0.30		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Lead	10	0.25		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Selenium	3.6	2.5		mg/Kg	1	7/27/2016 11:47:21 AM	26608
Silver	2.0	0.25		mg/Kg	1	7/27/2016 11:47:21 AM	26608
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	7/27/2016 5:55:50 PM	26603
Motor Oil Range Organics (MRO)	130	49		mg/Kg	1	7/27/2016 5:55:50 PM	26603
Surr: DNOP	80.0	70-130		%Rec	1	7/27/2016 5:55:50 PM	26603
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **RAA**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	7/27/2016 3:35:36 PM	26606
Surr: BFB	107	80-120		%Rec	1	7/27/2016 3:35:36 PM	26606
EPA METHOD 8021B: VOLATILES						Analyst: **RAA**	
Benzene	ND	0.024		mg/Kg	1	7/27/2016 3:35:36 PM	26606
Toluene	ND	0.048		mg/Kg	1	7/27/2016 3:35:36 PM	26606
Ethylbenzene	ND	0.048		mg/Kg	1	7/27/2016 3:35:36 PM	26606
Xylenes, Total	ND	0.097		mg/Kg	1	7/27/2016 3:35:36 PM	26606
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	7/27/2016 3:35:36 PM	26606

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#: **1607D04**

09-Aug-16

Client: Rule Engineering LLC

Project: SJGP

Sample ID **MB-26603**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26603**	RunNo: **36010**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115521** 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	8.0		10.00		80.5	70	130			

Sample ID **LCS-26603**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26603**	RunNo: **36010**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115716** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	50	10	50.00	0	101	62.6	124			
Surr: DNOP	4.5		5.000		90.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D04**

09-Aug-16

Client: Rule Engineering LLC

Project: SJGP

Sample ID **LCS-26606**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26606**	RunNo: **36031**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115993** 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	97.3	80	120			
Surr: BFB	1100		1000		114	80	120			

Sample ID **MB-26606**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26606**	RunNo: **36031**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115994** 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#: **1607D04**

09-Aug-16

Client: Rule Engineering LLC

Project: SJGP

Sample ID **LCS-26606**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26606**	RunNo: **36031**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1116018** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.99	0.025	1.000	0	99.4	75.3	123			
Toluene	0.96	0.050	1.000	0	96.3	80	124			
Ethylbenzene	0.97	0.050	1.000	0	96.9	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.7	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **MB-26606**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26606**	RunNo: **36031**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1116019** 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		98.6	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D04**

09-Aug-16

Client: Rule Engineering LLC

Project: SJGP

Sample ID **MB-26609**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **26609**	RunNo: **35996**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1114513** Units: **mg/Kg**

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

Sample ID **LCS-26609**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **26609**	RunNo: **35996**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1114514** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1667	0	99.5	80	120			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1607D04**

09-Aug-16

Client: Rule Engineering LLC

Project: SJGP

Sample ID **MB-26608**	SampType: **MBLK**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **PBS**	Batch ID: **26608**	RunNo: **36008**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115243** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

Sample ID **LCS-26608**	SampType: **LCS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **LCSS**	Batch ID: **26608**	RunNo: **36008**
Prep Date: **7/26/2016**	Analysis Date: **7/27/2016**	SeqNo: **1115247** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	25	2.5	25.00	0	99.7	80	120			
Barium	24	0.10	25.00	0	96.7	80	120			
Cadmium	24	0.10	25.00	0	97.3	80	120			
Chromium	24	0.30	25.00	0	96.4	80	120			
Lead	24	0.25	25.00	0	94.9	80	120			
Selenium	25	2.5	25.00	0	100	80	120			
Silver	4.8	0.25	5.000	0	96.7	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: 1607D04 RcptNo: 1

Received by/date: 07/26/16

Logged By: Lindsay Mangin 7/26/2016 7:50:00 AM

Completed By: Lindsay Mangin 7/26/2016 8:42:49 AM

Reviewed By: 07/26/16

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	2.7	Good	Yes			

Chain-of-Custody Record

ent: Rule Engineering LLC

ailing Address: 501 Airport Drive Suite
:5 Farmington, NM 87401

one #: 505 793 9486

ail or Fax#: jvaldez@rulengineering.com

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

ccreditation
NELAP ☐ Other ______

EDD (Type) ______

Turn-Around Time:
☑ Standard ☐ Rush ______

Project Name: SJGP

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: ☑ Yes ☐ No

Sample Temperature: 2.7

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. 1607D04	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)
~~/16~~	~~1500~~	~~Soil~~	~~SC-1~~																			
/16	1505	Soil	SC-2	4oz Glass	Cold	-001	X		X				X									
/16	1515	Soil	SC-3	4oz Glass	Cold	-002	X		X				X									
25/16	1500	Soil	SC-1	4oz Glass	Cold	-003	X		X				X									

Date	Time	Relinquished by	Received by	Date	Time
25/16	17:12	Justin Valdez	Heather Woods	7/25/16	1712
/16	1738	Heather Woods	Christine Walters	7/25/16	1738

Remarks: Direct Bill to ConocoPhillips

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

August 18, 2016

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

RE: COP San Juan Gas Plant OrderNo.: 1608540

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 3 sample(s) on 8/9/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1608540**
Date Reported: **8/18/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: COP San Juan Gas Plant
Lab ID: 1608540-001 **Matrix:** SOIL

Client Sample ID: SB-1 @ 11-12
Collection Date: 8/8/2016 9:50:00 AM
Received Date: 8/9/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	8/12/2016 10:02:36 AM	26928
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	8/12/2016 12:17:19 PM	26927
Barium	81	0.10		mg/Kg	1	8/15/2016 1:03:57 PM	26927
Cadmium	ND	0.10		mg/Kg	1	8/12/2016 12:17:19 PM	26927
Chromium	4.5	0.30		mg/Kg	1	8/12/2016 12:17:19 PM	26927
Lead	2.9	0.25		mg/Kg	1	8/15/2016 1:03:57 PM	26927
Selenium	ND	2.5		mg/Kg	1	8/15/2016 1:03:57 PM	26927
Silver	ND	0.25		mg/Kg	1	8/12/2016 12:17:19 PM	26927
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	8/10/2016 9:55:53 AM	26885
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/10/2016 9:55:53 AM	26885
Surr: DNOP	90.3	70-130		%Rec	1	8/10/2016 9:55:53 AM	26885
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/10/2016 10:49:16 AM	26858
Surr: BFB	80.2	68.3-144		%Rec	1	8/10/2016 10:49:16 AM	26858
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/10/2016 10:49:16 AM	26858
Toluene	ND	0.048		mg/Kg	1	8/10/2016 10:49:16 AM	26858
Ethylbenzene	ND	0.048		mg/Kg	1	8/10/2016 10:49:16 AM	26858
Xylenes, Total	ND	0.095		mg/Kg	1	8/10/2016 10:49:16 AM	26858
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	8/10/2016 10:49:16 AM	26858

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 San Juan Gas Plant
Lab ID: 1608540-002 **Matrix:** SOIL

Client Sample ID: SB-2 @ 11-12
Collection Date: 8/8/2016 10:15:00 AM
Received Date: 8/9/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.033		mg/Kg	1	8/12/2016 10:07:56 AM	26928
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Barium	110	0.10		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Cadmium	ND	0.10		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Chromium	4.5	0.30		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Lead	3.1	0.25		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Selenium	ND	2.5		mg/Kg	1	8/12/2016 12:28:19 PM	26927
Silver	ND	0.25		mg/Kg	1	8/12/2016 12:28:19 PM	26927
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.6		mg/Kg	1	8/10/2016 10:17:32 AM	26885
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/10/2016 10:17:32 AM	26885
Surr: DNOP	91.6	70-130		%Rec	1	8/10/2016 10:17:32 AM	26885
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/10/2016 11:13:57 AM	26858
Surr: BFB	79.5	68.3-144		%Rec	1	8/10/2016 11:13:57 AM	26858
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/10/2016 11:13:57 AM	26858
Toluene	ND	0.048		mg/Kg	1	8/10/2016 11:13:57 AM	26858
Ethylbenzene	ND	0.048		mg/Kg	1	8/10/2016 11:13:57 AM	26858
Xylenes, Total	ND	0.096		mg/Kg	1	8/10/2016 11:13:57 AM	26858
Surr: 4-Bromofluorobenzene	101	80-120		%Rec	1	8/10/2016 11:13:57 AM	26858

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 San Juan Gas Plant
Lab ID: 1608540-003 **Matrix:** SOIL

Client Sample ID: SB-3 @ 1.5-2.5
Collection Date: 8/8/2016 10:35:00 AM
Received Date: 8/9/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 7471: MERCURY						Analyst: **pmf**	
Mercury	ND	0.032		mg/Kg	1	8/12/2016 10:09:42 AM	26928
EPA METHOD 6010B: SOIL METALS						Analyst: **ELS**	
Arsenic	ND	2.5		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Barium	62	0.099		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Cadmium	ND	0.099		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Chromium	0.96	0.30		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Lead	2.8	0.25		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Selenium	ND	2.5		mg/Kg	1	8/12/2016 12:30:47 PM	26927
Silver	ND	0.25		mg/Kg	1	8/12/2016 12:30:47 PM	26927
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.5		mg/Kg	1	8/10/2016 10:38:58 AM	26885
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/10/2016 10:38:58 AM	26885
Surr: DNOP	94.9	70-130		%Rec	1	8/10/2016 10:38:58 AM	26885
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	8/10/2016 11:38:45 AM	26858
Surr: BFB	83.0	68.3-144		%Rec	1	8/10/2016 11:38:45 AM	26858
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/10/2016 11:38:45 AM	26858
Toluene	ND	0.048		mg/Kg	1	8/10/2016 11:38:45 AM	26858
Ethylbenzene	ND	0.048		mg/Kg	1	8/10/2016 11:38:45 AM	26858
Xylenes, Total	ND	0.096		mg/Kg	1	8/10/2016 11:38:45 AM	26858
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	8/10/2016 11:38:45 AM	26858

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#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **LCS-26885**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26885**	RunNo: **36346**
Prep Date: **8/10/2016**	Analysis Date: **8/10/2016**	SeqNo: **1125959** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	41	10	50.00	0	81.8	62.6	124			
Surr: DNOP	4.4		5.000		87.9	70	130			

Sample ID **MB-26885**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26885**	RunNo: **36346**
Prep Date: **8/10/2016**	Analysis Date: **8/10/2016**	SeqNo: **1125960** 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	9.1		10.00		90.6	70	130			

Sample ID **LCS-26867**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **26867**	RunNo: **36347**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126001** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.7		5.000		93.9	70	130			

Sample ID **MB-26867**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **26867**	RunNo: **36347**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126002** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.6		10.00		95.6	70	130			

Sample ID **1608540-001AMS**	SampType: **MS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SB-1 @ 11-12**	Batch ID: **26885**	RunNo: **36346**
Prep Date: **8/10/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126295** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	39	9.5	47.48	0	81.9	33.9	141			
Surr: DNOP	4.3		4.748		91.0	70	130			

Sample ID **1608540-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **SB-1 @ 11-12**	Batch ID: **26885**	RunNo: **36346**
Prep Date: **8/10/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126348** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	42	9.8	49.21	0	85.0	33.9	141	7.23	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **1608540-001AMSD**	SampType: **MSD**		TestCode: **EPA Method 8015M/D: Diesel Range Organics**		
Client ID: **SB-1 @ 11-12**	Batch ID: **26885**		RunNo: **36346**		
Prep Date: **8/10/2016**	Analysis Date: **8/10/2016**		SeqNo: **1126348**	Units: **mg/Kg**	

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.6		4.921		92.6	70	130	0	0	

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **MB-26858**	SampType: **MBLK**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **PBS**	Batch ID: **26858**	RunNo: **36367**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126685** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		110	68.3	144			

Sample ID **LCS-26858**	SampType: **LCS**	TestCode: **EPA Method 8015D: Gasoline Range**
Client ID: **LCSS**	Batch ID: **26858**	RunNo: **36367**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126686** 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	110	80	120			
Surr: BFB	1200		1000		122	68.3	144			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **MB-26858**	SampType: **MBLK**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **PBS**	Batch ID: **26858**	RunNo: **36367**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126698** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **LCS-26858**	SampType: **LCS**	TestCode: **EPA Method 8021B: Volatiles**
Client ID: **LCSS**	Batch ID: **26858**	RunNo: **36367**
Prep Date: **8/9/2016**	Analysis Date: **8/10/2016**	SeqNo: **1126699** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.93	0.025	1.000	0	93.3	75.3	123			
Toluene	1.0	0.050	1.000	0	103	80	124			
Ethylbenzene	1.1	0.050	1.000	0	114	82.8	121			
Xylenes, Total	3.3	0.10	3.000	0	110	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		108	80	120			

Qualifiers:

*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
D	Sample Diluted Due to Matrix	E	Value above quantitation range
H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
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#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **MB-26928**	SampType: **MBLK**	TestCode: **EPA Method 7471: Mercury**
Client ID: **PBS**	Batch ID: **26928**	RunNo: **36466**
Prep Date: **8/11/2016**	Analysis Date: **8/12/2016**	SeqNo: **1129445** Units: **mg/Kg**

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

Sample ID **LCS-26928**	SampType: **LCS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **LCSS**	Batch ID: **26928**	RunNo: **36466**
Prep Date: **8/11/2016**	Analysis Date: **8/12/2016**	SeqNo: **1129446** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.16	0.033	0.1667	0	96.0	80	120			

Sample ID **1608540-001AMS**	SampType: **MS**	TestCode: **EPA Method 7471: Mercury**
Client ID: **SB-1 @ 11-12**	Batch ID: **26928**	RunNo: **36466**
Prep Date: **8/11/2016**	Analysis Date: **8/12/2016**	SeqNo: **1129448** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.18	0.033	0.1653	0.007270	102	75	125			

Sample ID **1608540-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 7471: Mercury**
Client ID: **SB-1 @ 11-12**	Batch ID: **26928**	RunNo: **36466**
Prep Date: **8/11/2016**	Analysis Date: **8/12/2016**	SeqNo: **1129449** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Mercury	0.17	0.033	0.1679	0.007270	99.7	75	125	1.10	20	

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608540**

18-Aug-16

Client: Rule Engineering LLC
Project: COP San Juan Gas Plant

Sample ID	LCS-26927	SampType:	LCS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	LCSS	Batch ID:	26927	RunNo:	36462					
Prep Date:	8/11/2016	Analysis Date:	8/12/2016	SeqNo:	1129301	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	26	2.5	25.00	0	103	80	120			
Barium	25	0.10	25.00	0	99.5	80	120			
Cadmium	25	0.10	25.00	0	101	80	120			
Chromium	25	0.30	25.00	0	99.1	80	120			
Lead	24	0.25	25.00	0	97.6	80	120			
Selenium	27	2.5	25.00	0	108	80	120			
Silver	5.0	0.25	5.000	0	101	80	120			

Sample ID	1608540-001AMS	SampType:	MS	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	SB-1 @ 11-12	Batch ID:	26927	RunNo:	36462					
Prep Date:	8/11/2016	Analysis Date:	8/12/2016	SeqNo:	1129308	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.09	1.340	84.8	75	125			
Cadmium	21	0.10	25.09	0	81.7	75	125			
Chromium	25	0.30	25.09	4.497	80.6	75	125			
Silver	4.2	0.25	5.018	0	83.2	75	125			

Sample ID	1608540-001AMSD	SampType:	MSD	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	SB-1 @ 11-12	Batch ID:	26927	RunNo:	36462					
Prep Date:	8/11/2016	Analysis Date:	8/12/2016	SeqNo:	1129309	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	23	2.5	25.14	1.340	87.4	75	125	3.00	20	
Cadmium	21	0.10	25.14	0	82.6	75	125	1.34	20	
Chromium	25	0.30	25.14	4.497	80.2	75	125	0.227	20	
Silver	4.2	0.25	5.028	0	83.8	75	125	0.894	20	

Sample ID	MB-26927	SampType:	MBLK	TestCode:	EPA Method 6010B: Soil Metals					
Client ID:	PBS	Batch ID:	26927	RunNo:	36462					
Prep Date:	8/11/2016	Analysis Date:	8/12/2016	SeqNo:	1129323	Units:	mg/Kg			

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Arsenic	ND	2.5								
Barium	ND	0.10								
Cadmium	ND	0.10								
Chromium	ND	0.30								
Lead	ND	0.25								
Selenium	ND	2.5								
Silver	ND	0.25								

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#: **1608540**

18-Aug-16

Client: Rule Engineering LLC

Project: COP San Juan Gas Plant

Sample ID **1608540-001AMS**	SampType: **MS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SB-1 @ 11-12**	Batch ID: **26927**	RunNo: **36503**
Prep Date: **8/11/2016**	Analysis Date: **8/15/2016**	SeqNo: **1130434** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	110	0.10	25.09	80.60	124	75	125			
Lead	20	0.25	25.09	2.883	68.9	75	125			S
Selenium	18	2.5	25.09	0	72.0	75	125			S

Sample ID **1608540-001AMSD**	SampType: **MSD**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SB-1 @ 11-12**	Batch ID: **26927**	RunNo: **36503**
Prep Date: **8/11/2016**	Analysis Date: **8/15/2016**	SeqNo: **1130435** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Barium	100	0.10	25.14	80.60	88.8	75	125	8.20	20	
Lead	20	0.25	25.14	2.883	70.0	75	125	1.65	20	S
Selenium	19	2.5	25.14	0	74.3	75	125	3.34	20	S

Sample ID **1608540-001APS**	SampType: **PS**	TestCode: **EPA Method 6010B: Soil Metals**
Client ID: **SB-1 @ 11-12**	Batch ID: **26927**	RunNo: **36503**
Prep Date:	Analysis Date: **8/15/2016**	SeqNo: **1130436** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Lead	21	0.25	25.09	2.883	70.9	80	120			S
Selenium	20	2.5	25.09	0	79.1	80	120			S

Qualifiers:

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

HALL ENVIRONMENTAL ANALYSIS LABORATORY

Hall Environmental Analysis Laboratory
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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: 1608540 RcptNo: 1

Received by/date: AJ 08/09/16

Logged By: Ashley Gallegos 8/9/2016 8:00:00 AM

Completed By: Ashley Gallegos 8/9/2016 2:51:32 PM

Reviewed By: aJ 08/09/16

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	1.8	Good	Yes			

Chain-of-Custody Record

ient: Rule Engineering, LLC

ailing Address: 501 Airport Dr Suite
D5 Farmington, NM 87401

none #: 505 793 9481

mail or Fax#: jvalder@ruleengineering.com

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

ccreditation
NELAP ☐ Other _____

EDD (Type) _____

Turn-Around Time:
☑ Standard ☐ Rush _____

Project Name:
CoP San Juan Gas Plant

Project #:

Project Manager:
Heather Woods

Sampler: HeatherWoods / Justin Valdez

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.8°C

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

Analysis Request

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608540	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)
8/8/16	0950	Soil	SB-1 @ 11-12	(1) 4oz Glass	cold	-001	X		X				X										
8/8/16	1015	Soil	SB-2 @ 11-12	(1) 4oz Glass	cold	-002	X		X				X										
8/8/16	1035	Soil	SB-3 @ 1.5-2.5	(1) 4oz Glass	cold	-003	X		X				X										

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/8/16	1633	Heather M. Woods	Christie Walls	8/8/16	1633
8/9/16	1825	Christie Walls		08/09/16	0800

Remarks: Direct bill to Conocophillips
WO: A625000GP
Approver: LAWLEA
Ordered by: Clara Cardoza

If ne 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 y 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

August 26, 2016

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

RE: CoP SJGP OrderNo.: 1608D60

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 8/24/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Analytical Report
Lab Order **1608D60**
Date Reported: **8/26/2016**

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC
Project: CoP SJGP
Lab ID: 1608D60-001 **Matrix:** SOIL

Client Sample ID: AB-1@0.5
Collection Date: 8/23/2016 3:30:00 PM
Received Date: 8/24/2016 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	9.8		mg/Kg	1	8/25/2016 2:10:18 PM	27153
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 2:10:18 PM	27153
Surr: DNOP	84.3	70-130		%Rec	1	8/25/2016 2:10:18 PM	27153
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2016 5:18:01 PM	27147
Surr: BFB	82.6	68.3-144		%Rec	1	8/25/2016 5:18:01 PM	27147
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.024		mg/Kg	1	8/25/2016 5:18:01 PM	27147
Toluene	ND	0.047		mg/Kg	1	8/25/2016 5:18:01 PM	27147
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2016 5:18:01 PM	27147
Xylenes, Total	ND	0.094		mg/Kg	1	8/25/2016 5:18:01 PM	27147
Surr: 4-Bromofluorobenzene	96.1	80-120		%Rec	1	8/25/2016 5:18:01 PM	27147

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: AB-1@8
Project: CoP SJGP
Collection Date: 8/23/2016 3:50:00 PM
Lab ID: 1608D60-002 **Matrix:** SOIL **Received Date:** 8/24/2016 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	8/25/2016 2:32:15 PM	27153
Motor Oil Range Organics (MRO)	ND	50		mg/Kg	1	8/25/2016 2:32:15 PM	27153
Surr: DNOP	82.1	70-130		%Rec	1	8/25/2016 2:32:15 PM	27153
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	8/25/2016 6:28:16 PM	27147
Surr: BFB	83.6	68.3-144		%Rec	1	8/25/2016 6:28:16 PM	27147
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.025		mg/Kg	1	8/25/2016 6:28:16 PM	27147
Toluene	ND	0.050		mg/Kg	1	8/25/2016 6:28:16 PM	27147
Ethylbenzene	ND	0.050		mg/Kg	1	8/25/2016 6:28:16 PM	27147
Xylenes, Total	ND	0.099		mg/Kg	1	8/25/2016 6:28:16 PM	27147
Surr: 4-Bromofluorobenzene	99.6	80-120		%Rec	1	8/25/2016 6:28:16 PM	27147

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: AB-2@8
Project: CoP SJGP
Collection Date: 8/23/2016 4:20:00 PM
Lab ID: 1608D60-003 **Matrix:** SOIL **Received Date:** 8/24/2016 8:00:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015M/D: DIESEL RANGE ORGANICS						Analyst: **TOM**	
Diesel Range Organics (DRO)	ND	9.7		mg/Kg	1	8/25/2016 2:54:18 PM	27153
Motor Oil Range Organics (MRO)	ND	48		mg/Kg	1	8/25/2016 2:54:18 PM	27153
Surr: DNOP	84.4	70-130		%Rec	1	8/25/2016 2:54:18 PM	27153
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	8/25/2016 7:38:31 PM	27147
Surr: BFB	83.0	68.3-144		%Rec	1	8/25/2016 7:38:31 PM	27147
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	8/25/2016 7:38:31 PM	27147
Toluene	ND	0.047		mg/Kg	1	8/25/2016 7:38:31 PM	27147
Ethylbenzene	ND	0.047		mg/Kg	1	8/25/2016 7:38:31 PM	27147
Xylenes, Total	ND	0.094		mg/Kg	1	8/25/2016 7:38:31 PM	27147
Surr: 4-Bromofluorobenzene	99.0	80-120		%Rec	1	8/25/2016 7:38:31 PM	27147

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: AB-2@12
Project: CoP SJGP
Collection Date: 8/23/2016 4:40:00 PM
Lab ID: 1608D60-004
Matrix: SOIL
Received Date: 8/24/2016 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	8/25/2016 3:16:06 PM	27153
Motor Oil Range Organics (MRO)	ND	49		mg/Kg	1	8/25/2016 3:16:06 PM	27153
Surr: DNOP	93.1	70-130		%Rec	1	8/25/2016 3:16:06 PM	27153
EPA METHOD 8015D: GASOLINE RANGE						Analyst: **NSB**	
Gasoline Range Organics (GRO)	ND	4.6		mg/Kg	1	8/25/2016 8:01:55 PM	27147
Surr: BFB	84.5	68.3-144		%Rec	1	8/25/2016 8:01:55 PM	27147
EPA METHOD 8021B: VOLATILES						Analyst: **NSB**	
Benzene	ND	0.023		mg/Kg	1	8/25/2016 8:01:55 PM	27147
Toluene	ND	0.046		mg/Kg	1	8/25/2016 8:01:55 PM	27147
Ethylbenzene	ND	0.046		mg/Kg	1	8/25/2016 8:01:55 PM	27147
Xylenes, Total	ND	0.092		mg/Kg	1	8/25/2016 8:01:55 PM	27147
Surr: 4-Bromofluorobenzene	99.9	80-120		%Rec	1	8/25/2016 8:01:55 PM	27147

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#: **1608D60**

26-Aug-16

Client: Rule Engineering LLC
Project: CoP SJGP

Sample ID **LCS-27162**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **27162**	RunNo: **36745**
Prep Date: **8/25/2016**	Analysis Date: **8/25/2016**	SeqNo: **1138933** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.2		5.000		83.5	70	130			

Sample ID **MB-27162**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **27162**	RunNo: **36745**
Prep Date: **8/25/2016**	Analysis Date: **8/25/2016**	SeqNo: **1138934** Units: **%Rec**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.9		10.00		89.3	70	130			

Sample ID **LCS-27153**	SampType: **LCS**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **LCSS**	Batch ID: **27153**	RunNo: **36745**
Prep Date: **8/24/2016**	Analysis Date: **8/25/2016**	SeqNo: **1139712** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	46	10	50.00	0	91.9	62.6	124			
Surr: DNOP	4.3		5.000		85.1	70	130			

Sample ID **MB-27153**	SampType: **MBLK**	TestCode: **EPA Method 8015M/D: Diesel Range Organics**
Client ID: **PBS**	Batch ID: **27153**	RunNo: **36745**
Prep Date: **8/24/2016**	Analysis Date: **8/25/2016**	SeqNo: **1139713** 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	8.8		10.00		87.9	70	130			

Qualifiers:

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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608D60**

26-Aug-16

Client: Rule Engineering LLC
Project: CoP SJGP

Sample ID	**MB-27147**	SampType: **MBLK**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**PBS**	Batch ID: **27147**		RunNo: **36760**					
Prep Date:	**8/24/2016**	Analysis Date: **8/25/2016**		SeqNo: **1139619**		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	840		1000		84.4	68.3	144			

Sample ID	**LCS-27147**	SampType: **LCS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**LCSS**	Batch ID: **27147**		RunNo: **36760**					
Prep Date:	**8/24/2016**	Analysis Date: **8/25/2016**		SeqNo: **1139620**		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	920		1000		92.2	68.3	144			

Sample ID	**1608D60-001AMS**	SampType: **MS**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**AB-1@0.5**	Batch ID: **27147**		RunNo: **36760**					
Prep Date:	**8/24/2016**	Analysis Date: **8/25/2016**		SeqNo: **1139634**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.46	0	103	59.3	143			
Surr: BFB	900		978.5		92.4	68.3	144			

Sample ID	**1608D60-001AMSD**	SampType: **MSD**		TestCode: **EPA Method 8015D: Gasoline Range**					
Client ID:	**AB-1@0.5**	Batch ID: **27147**		RunNo: **36760**					
Prep Date:	**8/24/2016**	Analysis Date: **8/25/2016**		SeqNo: **1139646**		Units: **mg/Kg**			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	25	4.9	24.63	0	102	59.3	143	0.336	20	
Surr: BFB	920		985.2		93.0	68.3	144	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

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: **1608D60**

26-Aug-16

Client: Rule Engineering LLC

Project: CoP SJGP

Sample ID **MB-27147** SampType: **MBLK** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **PBS** Batch ID: **27147** RunNo: **36760**

Prep Date: **8/24/2016** Analysis Date: **8/25/2016** SeqNo: **1139732** 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		99.9	80	120			

Sample ID **LCS-27147** SampType: **LCS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **LCSS** Batch ID: **27147** RunNo: **36760**

Prep Date: **8/24/2016** Analysis Date: **8/25/2016** SeqNo: **1139733** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.88	0.025	1.000	0	88.1	75.3	123			
Toluene	0.92	0.050	1.000	0	92.3	80	124			
Ethylbenzene	0.96	0.050	1.000	0	95.9	82.8	121			
Xylenes, Total	2.9	0.10	3.000	0	96.4	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		106	80	120			

Sample ID **1608D60-002AMS** SampType: **MS** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **AB-1@8** Batch ID: **27147** RunNo: **36760**

Prep Date: **8/24/2016** Analysis Date: **8/25/2016** SeqNo: **1139736** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.70	0.023	0.9268	0	75.1	71.5	122			
Toluene	0.83	0.046	0.9268	0	89.1	71.2	123			
Ethylbenzene	0.91	0.046	0.9268	0	98.6	75.2	130			
Xylenes, Total	2.8	0.093	2.780	0	100	72.4	131			
Surr: 4-Bromofluorobenzene	0.96		0.9268		103	80	120			

Sample ID **1608D60-002AMSD** SampType: **MSD** TestCode: **EPA Method 8021B: Volatiles**

Client ID: **AB-1@8** Batch ID: **27147** RunNo: **36760**

Prep Date: **8/24/2016** Analysis Date: **8/25/2016** SeqNo: **1139737** Units: **mg/Kg**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.87	0.024	0.9515	0	91.8	71.5	122	22.6	20	R
Toluene	0.90	0.048	0.9515	0	94.7	71.2	123	8.69	20	
Ethylbenzene	0.93	0.048	0.9515	0	98.2	75.2	130	2.21	20	
Xylenes, Total	2.8	0.095	2.854	0	97.7	72.4	131	0.304	20	
Surr: 4-Bromofluorobenzene	0.99		0.9515		104	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: **1608D60** RcptNo: **1**

Received by/date: 08/24/16

Logged By: **Lindsay Mangin** **8/24/2016 8:00:00 AM**

Completed By: **Lindsay Mangin** **8/24/2016 9:53:12 AM**

Reviewed By: 08/24/16

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	3.4	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 Dr, Ste 205
Farmington, NM 87401
Phone #: (505) 716-2787
Email or Fax#: hwoods@ruleengineering.com
QA/QC Package: Standard ☐ Level 4 (Full Validation)
Accreditation: NELAP ☐ Other
EDD (Type)

Turn-Around Time: ☒ Standard ☐ Rush
Project Name: Cop SJGP
Project #:
Project Manager: H. Woods
Sampler: H. Woods
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.4

Date	Time	Matrix	Sample Request ID	Container Type and #	Preservative Type	HEAL No. 1608160	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)
8/23/16	1530	Soil	AB-1@0.5	(1) 4oz Glass	Cold	-001	X		X									
8/23/16	1550	Soil	AB-1@8	"	"	-002	X		X									
8/23/16	1620	Soil	AB-2@8	"	"	-003	X		X									
8/23/16	1640	Soil	AB-2@12	"	"	-004	X		X									

Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/16	1811			8/23/16	1711
Date:	Time:	Relinquished by:	Received by:	Date	Time
8/23/16	2017			08/24/16	0800

Remarks:
Direct Bill to Conocophillips
WO: A625000GP
User: LAWLEA
Ordered by: 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.