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 **ConocoPhillips Company** | Contact **Lisa Hunter** |
| Address **3401 East 30th St, Farmington, NM** | Telephone No. **(505) 258-1607** |
| Facility Name: **San Juan 28-7 Unit 153E** | Facility Type: **Gas Well** |

| | | |
|---|---|---|
| Surface Owner **Federal** | Mineral Owner **Federal (SF-078640)** | API No. **3003925883** |

## LOCATION OF RELEASE

| Unit Letter | Section | Township | Range | Feet from the | North/South Line | Feet from the | East/West Line | County |
|---|---|---|---|---|---|---|---|---|
| **I** | **20** | **27N** | **07W** | **1460** | **South** | **795** | **East** | **Rio Arriba** |

**Latitude 36.55492 Longitude -107.59219**

## NATURE OF RELEASE

| | | |
|---|---|---|
| Type of Release **Condensate & Produced Water** | Volume of Release **82bbl & 7bbls** | Volume Recovered **7bbls** |
| Source of Release **Production Tank** | Date and Hour of Occurrence **12/18/15 @ 7:00 a.m.** | Date and Hour of Discovery **12/22/15 @ 11:15 a.m.** |
| Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required | If YES, To Whom? **Vanessa Fields, OCD Katherina Diemer, BLM** | |
| By Whom? **Lisa Hunter** | Date and Hour **12/22/15 1:37 p.m. (OCD); 1:44 p.m. (BLM)** | |
| Was a Watercourse Reached? ☐ Yes ☒ No | If YES, Volume Impacting the Watercourse. **N/A** | |

OIL CONS. DIV DIST. 3
DEC 05 2016

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

Describe Cause of Problem and Remedial Action Taken.*
**Manway leaked on Production Tank. Leak was discovered during routine tank gauging. Truck was called to remove standing fluids. Tank will be repaired.**

Describe Area Affected and Cleanup Action Taken.*
**ConocoPhillips will assess the soil to determine a path forward for clean-up if necessary. Location is ranked 0. Excavation was 57' x 53' x 9-11' Deep. Analytical results were below the regulatory 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<br>Approved by Environmental Specialist: |
| Printed Name: **Lisa Hunter** | |
| Title: **Field Environmental Specialist** | Approval Date: 12/6/2016 Expiration Date: |
| E-mail Address: **Lisa.Hunter@cop.com** | Conditions of Approval: NVF1535834306 Attached ☐ |
| Date: **December 2, 2016** Phone: **(505) 258-1607** | |

* Attach Additional Sheets If Necessary

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# San Juan 28-7 #153E Release Report

Unit Letter I, Section 20, Township 27 North, Range 7 West
Rio Arriba County, New Mexico

December 1, 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 28-7 #153E 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:

M. Brown by HW

Michael A. Brown, P.E., Principal Engineer

December 1, 2016

## Table of Contents



### Tables



### Figures



### Appendices

## 1.0 Introduction

The ConocoPhillips San Juan 28-7 #153E release site is located in Unit Letter I, Section 20, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico. The release of approximately 82 barrels (bbls) of condensate and 7 bbls of produced water from the manway of the above ground condensate storage tank was discovered on December 18, 2015. The release was contained within the berm surrounding the tank and approximately 7 bbls of fluid were recovered using a vacuum truck.

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 28-7 #153E | | |
| ***Site Location Description*** | Unit Letter I, Section 20, Township 27 North, Range 7 West | | |
| ***Wellhead GPS Location*** | N36.55518 and W107.59234 | ***Release GPS Location*** | N36.55492 and W107.59219 |
| ***Land Jurisdiction*** | Bureau of Land Management | ***Discovery Date*** | December 18, 2015 |
| ***Release Source*** | Above Grade Condensate Storage Tank | ***Substance(s) Released*** | Condensate and Produced Water |
| ***Estimated Volume Released*** | 82 bbls condensate/ 7 bbls produced water | ***Volume Recovered*** | 7 bbls |
| ***NMOCD Site Rank*** | 0 | | |
| ***Distance to Nearest Surface Water*** | The channel of Cuervo Canyon is located over 1,000 feet northwest of the release location | | |
| ***Estimated Depth to Groundwater*** | Greater than 100 feet below ground 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 0 (Table 1).

Depth to groundwater at the site is greater than 100 feet bgs based on the elevation differential between the location and Cuervo Canyon and the cathodic well report for San Juan 28-7 #153M reported "no groundwater encountered".

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.

The channel of Cuervo Canyon is located over 1,000 northwest of the release location.

Based on the ranking score of 0, 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 5,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

## 4.0 Site Assessment

### *4.1 Field Activities*

On February 24, 2016, Rule Engineering, LLC (Rule) personnel conducted a site assessment to delineate the extent of the release which included advancing 11 soil borings (SB-1 through SB-11) utilizing a hand auger. Soil borings were advanced to depths ranging from approximately 2 to 3.5 feet bgs where refusal was encountered on hard soils or sandstone. Boring locations are illustrated on Figure 3.

### *4.2 Soil Sampling*

Rule collected soil samples from the soil borings at 0.5 to 2 foot intervals with an approximately 0.5 foot sample length at each interval. The lithology encountered at the site included interbedded clayey sand and poorly graded sand underlain by sandstone to the maximum depths of the soil borings.

A portion of each sample was field screened for volatile organic compounds (VOCs) and selected samples were analyzed for TPH. Field screening for VOC vapors was conducted with a MiniRAE 3000 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 Buck Scientific HC-404 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. Rule's practical quantitation limit for USEPA Method 418.1 is 20 mg/kg.

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 and TPH (GRO/DRO) per USEPA 8015D.

Initial site assessment field screening and laboratory analytical results are summarized in Table 2. The analytical laboratory report is included in Appendix A.

### *4.3 Field Screening Results*

Field screening results for samples collected from soil borings SB-1 through SB-11 indicated VOC concentrations ranging from 0.1 ppm to 3,621 ppm. Field TPH results for samples collected from soil borings SB-1 through SB-11 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to greater than 2,500 mg/kg. Field screening results are summarized in Table 2.

### *4.4 Laboratory Analytical Results*

Laboratory analytical results for site assessment sample SB-6 at 3.25 feet reported concentrations of 2.7 mg/kg benzene, 214 mg/kg total BTEX, 2,200 mg/kg GRO, and 1,200 mg/kg DRO.

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

## 5.0 Excavation Confirmation Sampling

### *5.1 Field Activities*

On June 29, 2016, Rule personnel collected confirmation samples from the resultant excavation. Laboratory analysis indicated concentrations of total BTEX and/or TPH in excess of NMOCD action levels. Additional material was removed from the portions of the excavation represented by these samples, and resampling was conducted on July 14 through 15, 2016. Laboratory results again indicated concentrations in excess of NMOCD action levels, and following additional excavation of the north base, one additional sample was collected on August 11, 2016. The maximum extent of the final excavation measured approximately 57 feet by 53 feet by 9 to 11 feet in depth. Excavated hydrocarbon impacted soils and rock were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with sample locations is included on Figure 4.

### *5.2 Soil Sampling*

Rule collected five composite confirmation soil samples (SC-1 through SC-8) on June 29, 2016; six additional samples (SC-2R, SC-3R, SC-4R, SC-7R, SC-8R, and SC-9) on July 14 and 15, 2016; and one additional sample (SC-8R(2)) on August 11, 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. Rule's practical quantitation limit for USEPA Method 418.1 is 20 mg/kg.

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, and TPH (GRO/DRO) per USEPA Method 8015M/D.

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

### *5.3 Field Screening Results*

Field screening results for soil confirmation samples SC-1 through SC-9 (including replacement samples) indicated VOC concentrations ranging from 0.0 ppm to 3,600 ppm. The field TPH concentration results for these samples ranged from 1,600 mg/kg to 4,940 mg/kg. Field screening results are summarized in Table 3.

### *5.4 Laboratory Analytical Results*

**Samples Removed by Excavation:** Samples removed by excavation due to NMOCD action level exceedances included SC-2, SC-3, SC-4, SC-7, SC-8, and SC-8R. Laboratory analytical results for these samples reported benzene concentrations ranging from below the laboratory reporting limits to 3.9 mg/kg; total BTEX concentrations ranging from 53 mg/kg to 297 mg/kg; and TPH (GRO/DRO) concentrations ranging from 1,450 mg/kg to 5,200 mg/kg.

**Final Excavation Confirmation Samples:** Samples collected for final excavation confirmation include SC-1, SC-2R, SC-3R, SC-4R, SC-5, SC-6, SC-7R, SC-8R(2), and SC-9. Laboratory analytical results for final excavation confirmation samples reported benzene concentrations ranging from below the laboratory reporting limit to 0.4 mg/kg, which are below the NMOCD action level of 10 mg/kg. Total BTEX concentrations for the final excavation samples ranged from below the laboratory reporting limit to 58 mg/kg, which were below the NMOCD action level for all the final excavation confirmation samples except for SC-7R, which exceeded the NMOCD action level of 50 mg/kg. The area of the base represented by SC-7 and SC-7R showed a significant reduction in total BTEX concentrations subsequent to the removal of an additional one to two feet of sandstone from 152 mg/kg on June 29, 2016, as sampled as SC-7 to 58 mg/kg on August 11, 2016 as samples as SC-7R. Laboratory analytical results indicate that TPH

(GRO/DRO) concentrations range from below the laboratory reporting limit to 1,740 mg/kg, which are below the NMOCD action level of 5,000 for a site rank of 0.

Laboratory analytical results are summarized in Table 3. The analytical laboratory reports are included in Appendix A.

## 6.0 Conclusions

The ConocoPhillips San Juan 28-7 #153E release site is located in Unit Letter I, Section 20, Township 27 North, Range 7 West, in Rio Arriba County, New Mexico. The release of approximately 82 barrels (bbls) of condensate and 7 bbls of produced water from the manway of the above ground condensate storage tank was discovered on December 18, 2015. The release was contained within the berm surrounding the tank and approximately 7 bbls of fluid were recovered using a vacuum truck. Following the initial excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-8 were collected from the excavation. Based on laboratory analytical results indicating concentrations of total BTEX and/or TPH in excess of NMOCD action levels, additional material was removed from several of the walls and base of the excavation prior to collecting confirmation samples from the final extents of the excavation. The final excavation extents measured at maximum approximately 57 feet by 53 feet by 9 to 11 feet in depth.

Laboratory analytical results for final excavation confirmation samples (SC-1, SC-2R, SC-3R, SC-4R, SC-5, SC-6, SC-7R, SC-8R(2), and SC-9) reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels for a site rank of 0, except for sample SC-7R which exceeded the NMOCD action level for total BTEX. Total BTEX concentrations for the northeast portion of the sandstone base represented by sample SC-7 decreased significantly from 152 mg/kg as sampled on June 29, 2016 to 58 mg/kg as sampled as SC-7R on August 11, 2016, subsequent to the removal of an additional one to two feet of sandstone from the base. Excavated hydrocarbon impacted soils and rock were transported to a local NMOCD approved landfarm for disposal/remediation and the excavation was backfilled with clean, imported material.

Based on laboratory analytical results of the excavation confirmation samples, no further work is recommended at this time.

## 7.0 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**
**San Juan 28-7 #153E**
**Rio Arriba County, New Mexico**

| Ranking Criteria | Ranking Score | Site-Based Ranking Score | Basis for Determination | Data Sources |
|---|---|---|---|---|
| **Depth to Groundwater** | | | | |
| <50 feet | 20 | 0 | Elevation differential between location and Cuervo Canyon derived from the topographic map of the area and no groundwater encountered on cathodic well report for the San Juan 28-7 #153M. | NMOCD Online database, Gould Pass 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, Gould Pass Quadrangle, Google Earth, and Visual Inspection |
| | 0 (No) | | | |
| **Distance to Surface Water Body** | | | | |
| <200 horizontal feet | 20 | 0 | The channel of Cuervo Canyon is located over 1,000 feet northwest of release location. | Gould Pass Quadrangle, Google Earth, and Visual Inspection |
| 200 to 1,000 horizontal feet | 10 | | | |
| >1,000 horizontal feet | 0 | | | |
| **Site Based Total Ranking Score** | | **0** | | |

**Table 2. Site Assessment Field Screening and Laboratory Analytical Results**
**ConocoPhillips**
**San Juan 27-8 #153E**
**Rio Arriba 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD Action Level* | | | 100 | 5,000 | 10 | NE | NE | NE | 50 | 5,000 | |
| SB-1 | 3/24/2016 | 0.5 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2 | 0.4 | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-2 | 3/24/2016 | 0.5 | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2 | 0.2 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2.5 | 0.6 | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-3 | 3/24/2016 | 0.5 | 0.1 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2 | 0.3 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2.5 | **583** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3.5 | **974** | 32.6 | -- | -- | -- | -- | -- | -- | -- |
| SB-4 | 3/24/2016 | 1 | **520** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2.5 | **1,000** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | **3,200** | **>2,500** | -- | -- | -- | -- | -- | -- | -- |
| SB-5 | 3/24/2016 | 1 | 1.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2 | 0.7 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | 1.0 | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-6 | 3/24/2016 | 1 | 67.5 | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2 | **473** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | **767** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3.25 | **1,734** | **>2,500** | 2.7 | 59 | 12 | 140 | **214** | 2,200 | 1,200 |
| | | 3.5 | **1,222** | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-7 | 3/24/2016 | 2 | **1,053** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3.5 | **1,684** | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-8 | 3/24/2016 | 0.5 | **2,565** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 2.5 | **1,229** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 4 | **1,357** | -- | -- | -- | -- | -- | -- | -- | -- |
| SB-9 | 3/24/2016 | 1.5 | **163** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | **205** | -- | -- | -- | -- | -- | -- | -- | -- |

**Table 2. Site Assessment Field Screening and Laboratory Analytical Results**
**ConocoPhillips**
**San Juan 27-8 #153E**
**Rio Arriba 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NMOCD Action Level* | | | 100 | 5,000 | 10 | NE | NE | NE | 50 | 5,000 | |
| SB-10 | 3/24/2016 | 1 | **3,621** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | **511** | <20.0 | -- | -- | -- | -- | -- | -- | -- |
| SB-11 | 3/24/216 | 1 | **1,971** | -- | -- | -- | -- | -- | -- | -- | -- |
| | | 3 | **1,778** | -- | -- | -- | -- | -- | -- | -- | -- |

Notes: All borings were terminated at auger refusal on sandstone.

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)*

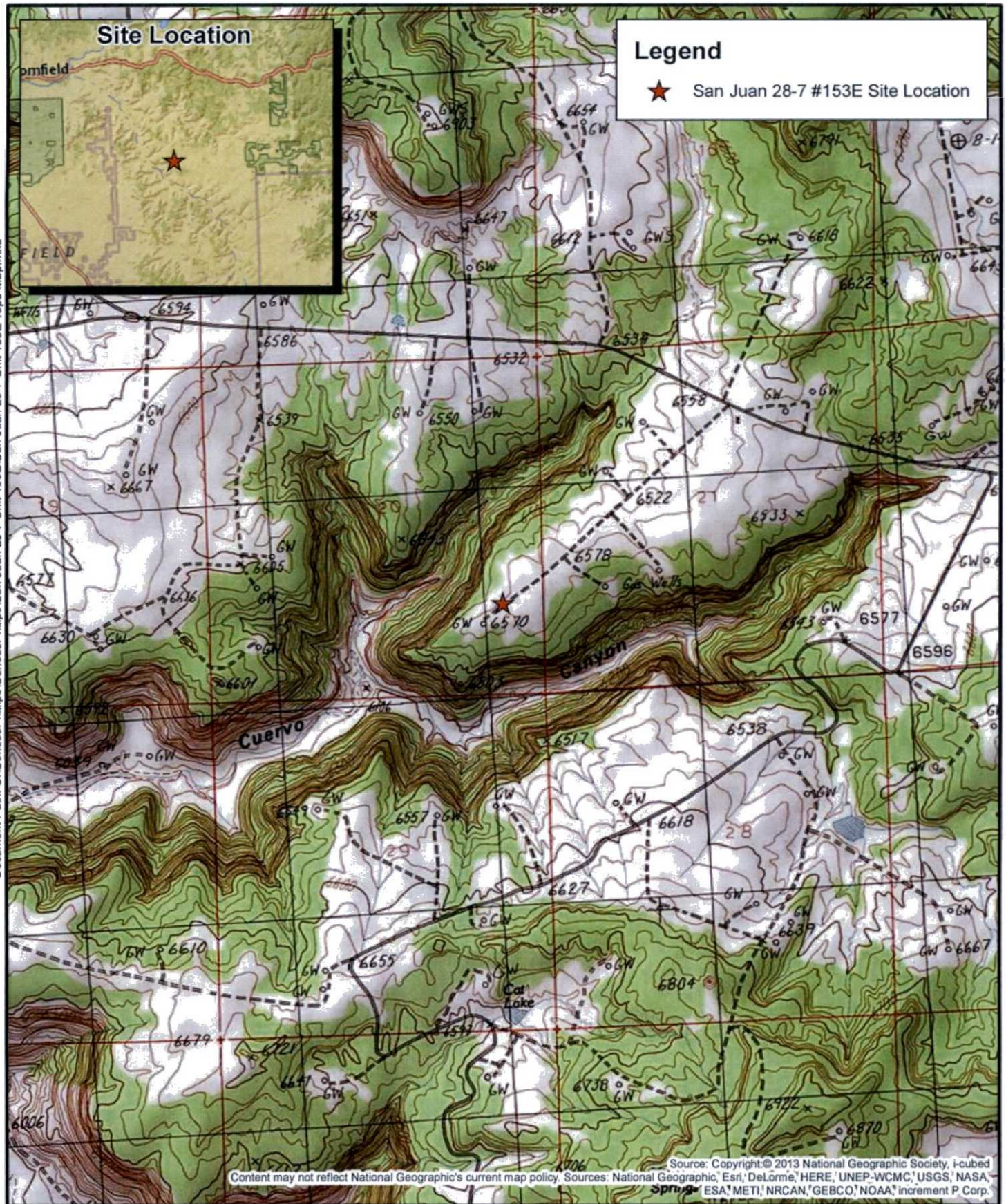
**Based on a site ranking of 0.

**Table 3. Excavation Confirmation Field Screening and Laboratory Analytical Results**
**ConocoPhillips**
**San Juan 28-7 #153E**
**Rio Arriba County, New Mexico**

| Sample Name | Date | Location | Approximate Sample Depth (ft bgs) | Field Screening Results | | Laboratory Analytical Results | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | OVM by PID (ppm) on 6/29/2016 | TPH per 418.1 on 6/29/2016 | 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) |
| NMOCD Action Level* | | | | 100 | 5,000** | 10 | NE | NE | NE | 50 | 5,000** | |
| Removed by Excavation | | | | | | | | | | | | |
| SC-2 | 6/29/2016 | Wall | 0.5 to 9 | **1,170** | 2,930 | 1.0 | 25 | 7.1 | 86 | **119** | 1,400 | 1,500 |
| SC-3 | 6/29/2016 | Wall | 0.5 to 9 | **850** | 2,950 | 1.3 | 41 | 9.0 | 130 | **181** | 1,900 | 1,000 |
| SC-4 | 6/29/2016 | Wall | 0.5 to 9 | **1,200** | 4,650 | <1.1 | 7.5 | 4.2 | 53 | **65** | 1,100 | 1,100 |
| SC-7 | 6/29/2016 | Base | 7 to 8 | **1,300** | 4,940 | 1.2 | 32 | 8.5 | 110 | **152** | 1,600 | 1,400 |
| SC-8 | 6/29/2016 | Base | 8 to 9 | **1,030** | 2,090 | <0.23 | 10 | 3.2 | 40 | **53** | 570 | 880 |
| SC-8R | 7/14/2016 | Base | 9 to 10 | **1,870** | 4,460 | 3.9 | 78 | 15 | 200 | **297** | **3,100** | **2,100** |
| Excavation Confirmation Samples | | | | | | | | | | | | |
| SC-1 | 6/29/2016 | Wall | 0.5 to 8 | **1,170** | 4,060 | <0.25 | 2.2 | 1.3 | 17 | 21 | 320 | 1,400 |
| SC-2R | 7/14/2016 | Wall | 0.5 to 9 | 0.0 | -- | <0.024 | <0.048 | <0.048 | <0.097 | <0.217 | <4.8 | <9.7 |
| SC-3R | 7/14/2016 | Wall | 0.5 to 10 | 10.6 | -- | <0.025 | <0.050 | <0.050 | <0.10 | <0.23 | <5.0 | <9.5 |
| SC-4R | 7/15/2016 | Wall | 0.5 to 10 | 15.7 | -- | <0.025 | <0.049 | <0.049 | <0.098 | <0.221 | <4.9 | <10 |
| SC-5 | 6/29/2016 | Wall | 0.5 to 9 | **860** | 2,780 | <0.24 | 2.9 | 2.6 | 35 | 41 | 550 | 1,100 |
| SC-6 | 6/29/2016 | Wall | 0.5 to 8 | **970** | 1,830 | <0.025 | 0.070 | 0.12 | 1.7 | 1.9 | 42 | 190 |
| SC-7R | 7/14/2016 | Base | 8 to 9 | **1,776** | 3,150 | <0.24 | 7.2 | 3.5 | 47 | **58** | 540 | 1,200 |
| SC-8R(2) | 8/11/2016 | Base | 10 to 11 | **3,600** | 1,600 | 0.4 | 9.9 | 1.9 | 30 | 42.2 | 260 | 500 |
| SC-9 | 7/15/2016 | Wall | 0.5 to 11 | **105** | -- | <0.024 | <0.048 | <0.048 | <0.096 | <0.216 | <4.8 | <10 |

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 0.

# Figures




Document Path: U:\ConocoPhillips\ConocoPhillips\San Juan 28-7 Unit 153E\San Juan 28-7 Unit 153E Topo Map.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

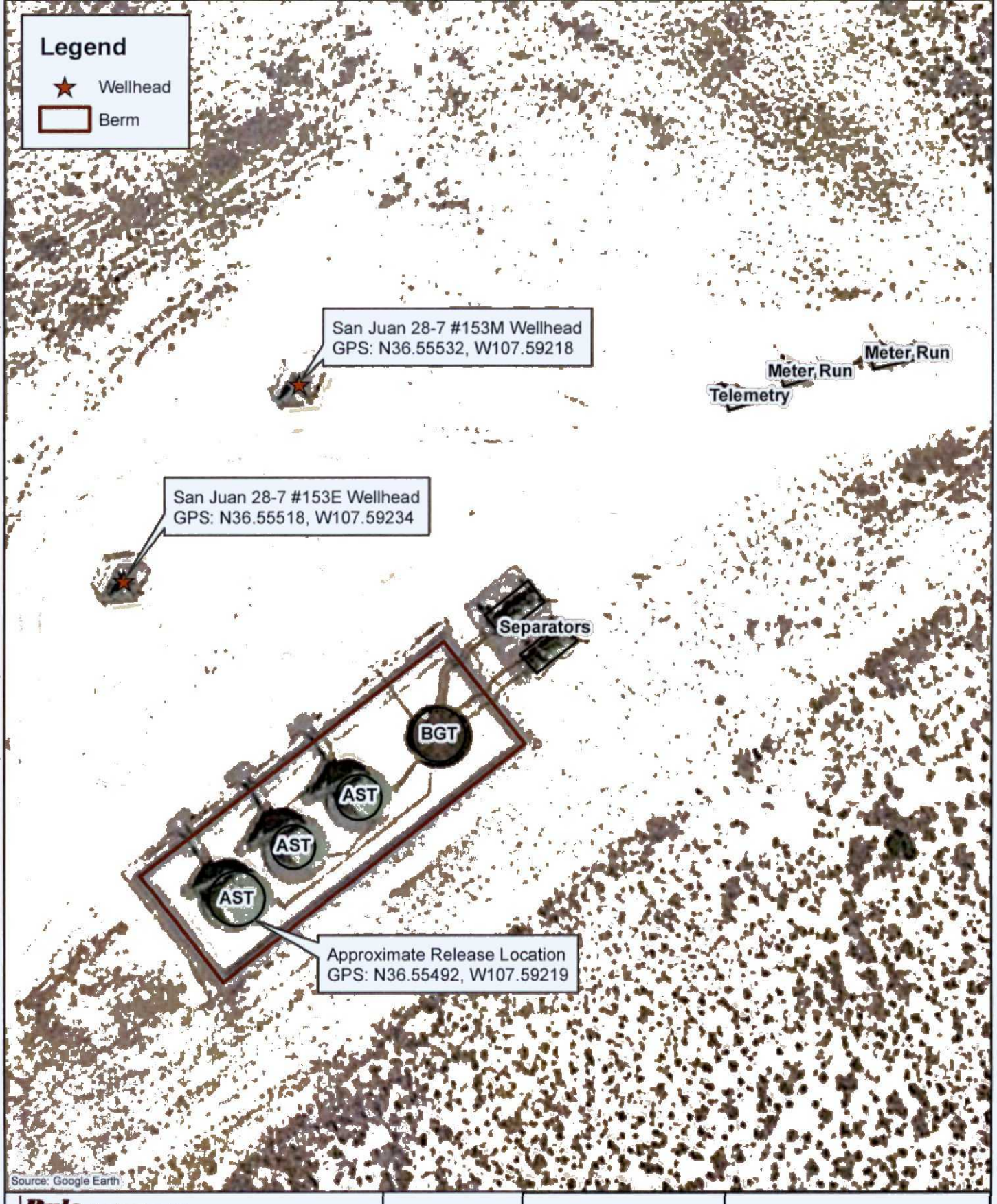
0 0.2 0.4 0.8 Miles

Gould Pass Quadrangle
1:24,000

ConocoPhillips

I-S20-T27N-R07W
N36.55492, W107.59219
Rio Arriba County, NM
API: 30-039-25883

**Figure 1**
**Topographic Map**
San Juan 28-7 #153E

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Rule Engineering, LLC
Solutions to Regulations for Industry

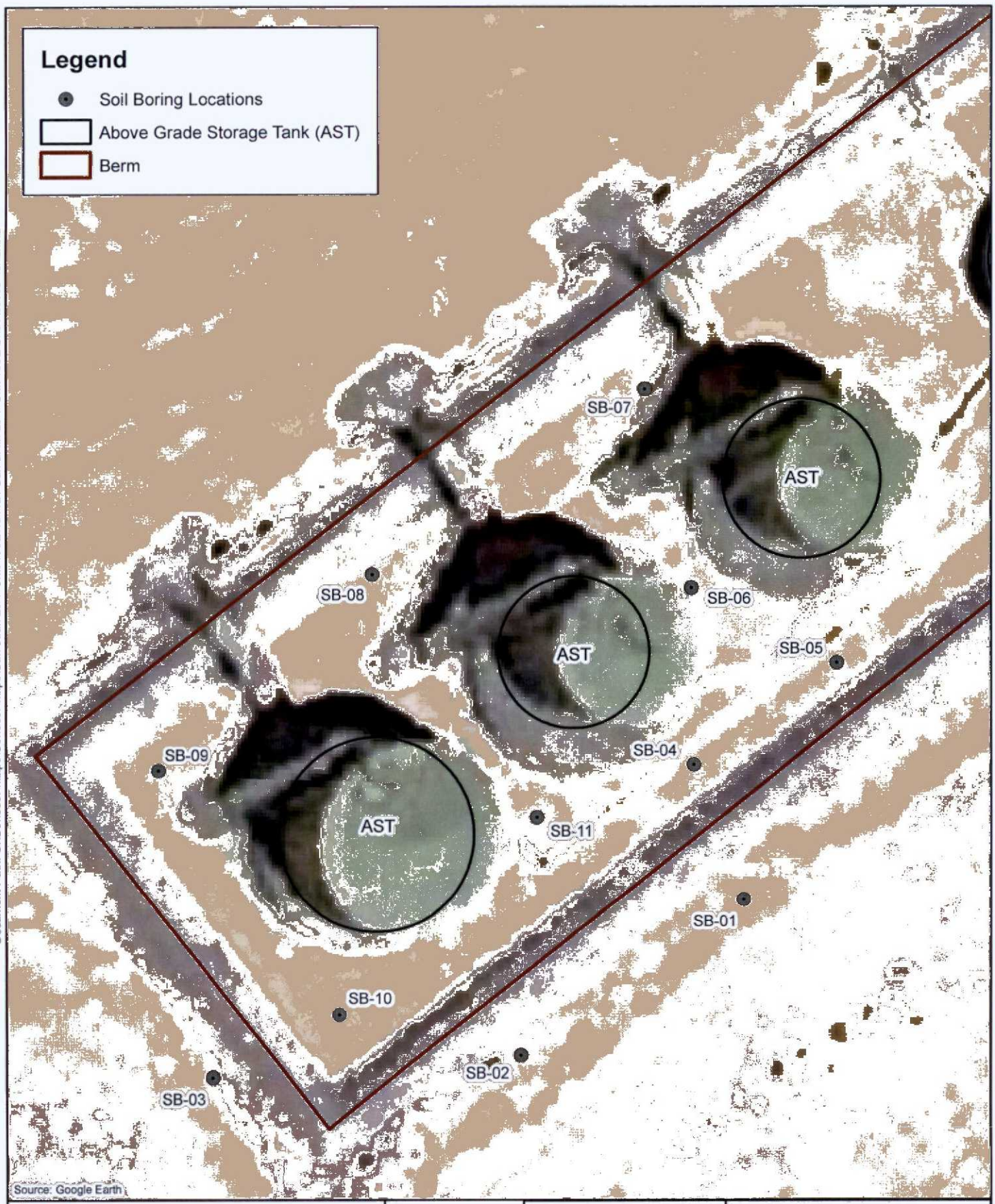
0 10 20 40 60 80 Feet

1 inch = 35 feet

ConocoPhillips

I-S20-T27N-R07W
N36.55492, W107.59219
Rio Arriba County, NM
API: 30-039-25883

**Figure 2**
**Aerial Site Map**
San Juan 28-7 #153E




Document Path: U:\ConocoPhillips\ConocoPhillips\San Juan 28-7 Unit 153E\161121 San Juan 28-7 Unit 153E Site Assessment.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

0 5 10 20 Feet

1 inch = 10 feet

ConocoPhillips

I-S20-T27N-R07W
N36.55492, W107.59219
Rio Arriba County, NM
API: 30-039-25883

**Figure 3**
**Site Assesment Map**
San Juan 28-7 #153E


Document Path: U:\ConocoPhillips\ConocoPhillips\San Juan 28-7 Unit 153E\161121 San Juan 28-7 Unit 153E Exc Conf.mxd

Rule Engineering, LLC
Solutions to Regulations for Industry

0 3 6 12 18 24 Feet

1 inch = 12 feet

ConocoPhillips

I-S20-T27N-R07W
N36.55492, W107.59219
Rio Arriba County, NM
API: 30-039-25883

**Figure 4**
**Excavation Confirmation Sample Location Map**
San Juan 28-7 Unit 153E

# 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*

April 01, 2016

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

RE: COP San Juan 28 7 153E OrderNo.: 1603C73

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 3/25/2016 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 **1603C73**
Date Reported: **4/1/2016**

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Client Sample ID:** SB-6@3.25'
**Project:** COP San Juan 28 7 153E
**Collection Date:** 3/24/2016 12:34:00 PM
**Lab ID:** 1603C73-001 **Matrix:** SOIL **Received Date:** 3/25/2016 7:45:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **KJH** | |
| Diesel Range Organics (DRO) | 1200 | 100 | | mg/Kg | 10 | 3/30/2016 1:10:40 PM | 24462 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 3/30/2016 1:10:40 PM | 24462 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 2200 | 97 | | mg/Kg | 20 | 3/29/2016 12:07:56 PM | 24469 |
| Surr: BFB | 306 | 66.2-112 | S | %Rec | 20 | 3/29/2016 12:07:56 PM | 24469 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 2.7 | 0.49 | | mg/Kg | 20 | 3/29/2016 12:07:56 PM | 24469 |
| Toluene | 59 | 0.97 | | mg/Kg | 20 | 3/29/2016 12:07:56 PM | 24469 |
| Ethylbenzene | 12 | 0.97 | | mg/Kg | 20 | 3/29/2016 12:07:56 PM | 24469 |
| Xylenes, Total | 140 | 1.9 | | mg/Kg | 20 | 3/29/2016 12:07:56 PM | 24469 |
| Surr: 4-Bromofluorobenzene | 134 | 80-120 | S | %Rec | 20 | 3/29/2016 12:07:56 PM | 24469 |

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#: **1603C73**

*01-Apr-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28 7 153E

| Sample ID **LCS-24462** | SampType: **LCS** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **LCSS** | Batch ID: **24462** | | | RunNo: **33161** | | | | | |
| Prep Date: **3/28/2016** | Analysis Date: **3/30/2016** | | | SeqNo: **1018311** | | Units: **mg/Kg** | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 45 | 10 | 50.00 | 0 | 90.1 | 65.8 | 136 | | | |
| Surr: DNOP | 4.6 | | 5.000 | | 92.9 | 70 | 130 | | | |

| Sample ID **MB-24462** | SampType: **MBLK** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Client ID: **PBS** | Batch ID: **24462** | | | RunNo: **33161** | | | | | |
| Prep Date: **3/28/2016** | Analysis Date: **3/30/2016** | | | SeqNo: **1018312** | | Units: **mg/Kg** | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 9.1 | | 10.00 | | 91.5 | 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#: **1603C73**

*01-Apr-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28 7 153E

| Sample ID **MB-24469** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **24469** | RunNo: **33130** |
| Prep Date: **3/28/2016** | Analysis Date: **3/29/2016** | SeqNo: **1017591** 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 | | 107 | 66.2 | 112 | | | |

| Sample ID **LCS-24469** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **24469** | RunNo: **33130** |
| Prep Date: **3/28/2016** | Analysis Date: **3/29/2016** | SeqNo: **1017592** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 23 | 5.0 | 25.00 | 0 | 90.0 | 80 | 120 | | | |
| Surr: BFB | 1100 | | 1000 | | 115 | 66.2 | 112 | | | S |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1603C73**

*01-Apr-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28 7 153E

| Sample ID **MB-24469** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **24469** | RunNo: **33130** |
| Prep Date: **3/28/2016** | Analysis Date: **3/29/2016** | SeqNo: **1017599** 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 | | 111 | 80 | 120 | | | |

| Sample ID **LCS-24469** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **24469** | RunNo: **33130** |
| Prep Date: **3/28/2016** | Analysis Date: **3/29/2016** | SeqNo: **1017600** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.95 | 0.025 | 1.000 | 0 | 95.3 | 75.3 | 123 | | | |
| Toluene | 0.92 | 0.050 | 1.000 | 0 | 92.1 | 80 | 124 | | | |
| Ethylbenzene | 0.93 | 0.050 | 1.000 | 0 | 92.5 | 82.8 | 121 | | | |
| Xylenes, Total | 2.7 | 0.10 | 3.000 | 0 | 91.0 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 113 | 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: 1603C73  RcptNo: 1

Received by/date: 03/25/16

Logged By: Lindsay Mangin  3/25/2016 7:45:00 AM

Completed By: Lindsay Mangin  3/25/2016 8:39:20 AM

Reviewed By: 03/28/16

## 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 | 1.3 | 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, Suite 205 Farmington, NM 87401

Phone #: (505) 716-2707

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 San Juan 28-7 #153E

Project #:

Project Manager: Heather Woods

Sampler: H. Woods / J. Valdez

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.3

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
|---|---|---|---|---|---|---|
| 3/24/16 | 1234 | Soil | SB-6 @ 3.25' | (1) 4oz Glass | Cold | 1603073 -001 |

Analysis Request

| 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | | X | | | | | | | | | | | | | |

NFS HW

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 3/24/16 | 1716 | Heather M. Woods | | 3/24/16 | 1716 |
| 3/24/16 | 1837 | | | 03/25/16 | 0745 |

Remarks:
Direct Bill to ConocoPhillips
WO: 21349392
User: MCINNSK
Area Super: Ervin Wyckoff

Area: 7
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*

July 06, 2016

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

RE: San Juan 28-7 153E OrderNo.: 1606G63

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 6 sample(s) on 6/30/2016 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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Client Sample ID:** SC-1
**Project:** San Juan 28-7 153E
**Collection Date:** 6/29/2016 10:15:00 AM
**Lab ID:** 1606G63-001
**Matrix:** SOIL
**Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1400 | 98 | | mg/Kg | 10 | 7/5/2016 11:13:29 AM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 11:13:29 AM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 320 | 49 | | mg/Kg | 10 | 7/2/2016 10:10:29 AM | 26163 |
| Surr: BFB | 225 | 80-120 | S | %Rec | 10 | 7/2/2016 10:10:29 AM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.25 | | mg/Kg | 10 | 7/2/2016 10:10:29 AM | 26163 |
| Toluene | 2.2 | 0.49 | | mg/Kg | 10 | 7/2/2016 10:10:29 AM | 26163 |
| Ethylbenzene | 1.3 | 0.49 | | mg/Kg | 10 | 7/2/2016 10:10:29 AM | 26163 |
| Xylenes, Total | 17 | 0.98 | | mg/Kg | 10 | 7/2/2016 10:10:29 AM | 26163 |
| Surr: 4-Bromofluorobenzene | 112 | 80-120 | | %Rec | 10 | 7/2/2016 10:10:29 AM | 26163 |

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:** San Juan 28-7 153E
**Collection Date:** 6/29/2016 1:15:00 PM
**Lab ID:** 1606G63-002
**Matrix:** SOIL
**Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1500 | 96 | | mg/Kg | 10 | 7/5/2016 11:35:07 AM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 11:35:07 AM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 1400 | 95 | | mg/Kg | 20 | 7/1/2016 9:00:36 PM | 26163 |
| Surr: BFB | 272 | 80-120 | S | %Rec | 20 | 7/1/2016 9:00:36 PM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 1.0 | 0.47 | | mg/Kg | 20 | 7/1/2016 9:00:36 PM | 26163 |
| Toluene | 25 | 0.95 | | mg/Kg | 20 | 7/1/2016 9:00:36 PM | 26163 |
| Ethylbenzene | 7.1 | 0.95 | | mg/Kg | 20 | 7/1/2016 9:00:36 PM | 26163 |
| Xylenes, Total | 86 | 1.9 | | mg/Kg | 20 | 7/1/2016 9:00:36 PM | 26163 |
| Surr: 4-Bromofluorobenzene | 119 | 80-120 | | %Rec | 20 | 7/1/2016 9:00:36 PM | 26163 |

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:** San Juan 28-7 153E
**Lab ID:** 1606G63-003 **Matrix:** SOIL

**Client Sample ID:** SC-3
**Collection Date:** 6/29/2016 1:30:00 PM
**Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1000 | 96 | | mg/Kg | 10 | 7/5/2016 11:56:38 AM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 11:56:38 AM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 1900 | 99 | | mg/Kg | 20 | 7/1/2016 9:24:08 PM | 26163 |
| Surr: BFB | 335 | 80-120 | S | %Rec | 20 | 7/1/2016 9:24:08 PM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 1.3 | 0.50 | | mg/Kg | 20 | 7/1/2016 9:24:08 PM | 26163 |
| Toluene | 41 | 0.99 | | mg/Kg | 20 | 7/1/2016 9:24:08 PM | 26163 |
| Ethylbenzene | 9.0 | 0.99 | | mg/Kg | 20 | 7/1/2016 9:24:08 PM | 26163 |
| Xylenes, Total | 130 | 2.0 | | mg/Kg | 20 | 7/1/2016 9:24:08 PM | 26163 |
| Surr: 4-Bromofluorobenzene | 124 | 80-120 | S | %Rec | 20 | 7/1/2016 9:24:08 PM | 26163 |

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:** San Juan 28-7 153E
**Collection Date:** 6/29/2016 3:55:00 PM
**Lab ID:** 1606G63-004 **Matrix:** SOIL **Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1100 | 100 | | mg/Kg | 10 | 7/5/2016 12:18:20 PM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 12:18:20 PM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 550 | 48 | | mg/Kg | 10 | 7/2/2016 10:33:57 AM | 26163 |
| Surr: BFB | 336 | 80-120 | S | %Rec | 10 | 7/2/2016 10:33:57 AM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.24 | | mg/Kg | 10 | 7/2/2016 10:33:57 AM | 26163 |
| Toluene | 2.9 | 0.48 | | mg/Kg | 10 | 7/2/2016 10:33:57 AM | 26163 |
| Ethylbenzene | 2.6 | 0.48 | | mg/Kg | 10 | 7/2/2016 10:33:57 AM | 26163 |
| Xylenes, Total | 35 | 0.96 | | mg/Kg | 10 | 7/2/2016 10:33:57 AM | 26163 |
| Surr: 4-Bromofluorobenzene | 122 | 80-120 | S | %Rec | 10 | 7/2/2016 10:33:57 AM | 26163 |

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-6
**Project:** San Juan 28-7 153E
**Collection Date:** 6/29/2016 10:30:00 AM
**Lab ID:** 1606G63-005 **Matrix:** SOIL **Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 190 | 100 | | mg/Kg | 10 | 7/5/2016 12:40:18 PM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 12:40:18 PM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 42 | 5.0 | | mg/Kg | 1 | 7/2/2016 10:57:30 AM | 26163 |
| Surr: BFB | 324 | 80-120 | S | %Rec | 1 | 7/2/2016 10:57:30 AM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 7/2/2016 10:57:30 AM | 26163 |
| Toluene | 0.070 | 0.050 | | mg/Kg | 1 | 7/2/2016 10:57:30 AM | 26163 |
| Ethylbenzene | 0.12 | 0.050 | | mg/Kg | 1 | 7/2/2016 10:57:30 AM | 26163 |
| Xylenes, Total | 1.7 | 0.099 | | mg/Kg | 1 | 7/2/2016 10:57:30 AM | 26163 |
| Surr: 4-Bromofluorobenzene | 115 | 80-120 | | %Rec | 1 | 7/2/2016 10:57:30 AM | 26163 |

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-8
**Project:** San Juan 28-7 153E
**Collection Date:** 6/29/2016 1:45:00 PM
**Lab ID:** 1606G63-006
**Matrix:** SOIL
**Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 880 | 96 | | mg/Kg | 10 | 7/5/2016 1:02:03 PM | 26196 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/5/2016 1:02:03 PM | 26196 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 570 | 46 | | mg/Kg | 10 | 7/2/2016 11:21:11 AM | 26163 |
| Surr: BFB | 307 | 80-120 | S | %Rec | 10 | 7/2/2016 11:21:11 AM | 26163 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.23 | | mg/Kg | 10 | 7/2/2016 11:21:11 AM | 26163 |
| Toluene | 10 | 0.46 | | mg/Kg | 10 | 7/2/2016 11:21:11 AM | 26163 |
| Ethylbenzene | 3.2 | 0.46 | | mg/Kg | 10 | 7/2/2016 11:21:11 AM | 26163 |
| Xylenes, Total | 40 | 0.92 | | mg/Kg | 10 | 7/2/2016 11:21:11 AM | 26163 |
| Surr: 4-Bromofluorobenzene | 119 | 80-120 | | %Rec | 10 | 7/2/2016 11:21:11 AM | 26163 |

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#: **1606G63**

*06-Jul-16*

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153E

| Sample ID **LCS-26196** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26196** | RunNo: **35412** |
| Prep Date: **7/1/2016** | Analysis Date: **7/5/2016** | SeqNo: **1095779** 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 | 4.5 | | 5.000 | | 89.4 | 70 | 130 | | | |

| Sample ID **MB-26196** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26196** | RunNo: **35412** |
| Prep Date: **7/1/2016** | Analysis Date: **7/5/2016** | SeqNo: **1095780** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 9.2 | | 10.00 | | 92.0 | 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#: **1606G63**

*06-Jul-16*

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153E

| Sample ID **MB-26163** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26163** | RunNo: **35388** |
| Prep Date: **6/30/2016** | Analysis Date: **7/1/2016** | SeqNo: **1095063** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 990 | | 1000 | | 99.4 | 80 | 120 | | | |

| Sample ID **LCS-26163** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26163** | RunNo: **35388** |
| Prep Date: **6/30/2016** | Analysis Date: **7/1/2016** | SeqNo: **1095064** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 27 | 5.0 | 25.00 | 0 | 107 | 80 | 120 | | | |
| Surr: BFB | 1200 | | 1000 | | 115 | 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#: **1606G63**

***06-Jul-16***

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153E

| Sample ID **MB-26163** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26163** | RunNo: **35388** |
| Prep Date: **6/30/2016** | Analysis Date: **7/1/2016** | SeqNo: **1095090** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.96 | | 1.000 | | 96.0 | 80 | 120 | | | |

| Sample ID **LCS-26163** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26163** | RunNo: **35388** |
| Prep Date: **6/30/2016** | Analysis Date: **7/1/2016** | SeqNo: **1095091** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.92 | 0.025 | 1.000 | 0 | 91.9 | 75.3 | 123 | | | |
| Toluene | 0.96 | 0.050 | 1.000 | 0 | 95.6 | 80 | 124 | | | |
| Ethylbenzene | 1.0 | 0.050 | 1.000 | 0 | 101 | 82.8 | 121 | | | |
| Xylenes, Total | 3.0 | 0.10 | 3.000 | 0 | 101 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 103 | 80 | 120 | | | |

**Qualifiers:**

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

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: 1606G63  RcptNo: 1

Received by/date: JC 06/30/16

Logged By: Ashley Gallegos 6/30/2016 8:05:00 AM

Completed By: Ashley Gallegos 6/30/2016 8:26:57 AM

Reviewed By: 06/30/16

## 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 | 1.1 | Good | Yes | | | |

# Chain-of-Custody Record

Client: Rule Engineering, LLC

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

Phone #: (505) 793 9480

Email or Fax#: jvalder@ruleengineering.com

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

Accreditation
NELAP ☐ Other _____

EDD (Type) _____

Turn-Around Time:
☐ Standard ☑ Rush 3 Day

Project Name: San Juan 28-7 153E

Project #:

Project Manager: Heather Woods

Sampler: Justin Valder

On Ice: ☒ Yes ☐ No

Sample Temperature: 1.1

**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. 1606G163 | BTEX + ~~MTBE~~ + ~~TMB's~~ (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / ~~MRO~~) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (~~F, Cl, NO3, PO4, SO4~~) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/29/16 | 10:15 | Soil | SL-1 | (1) 40z Glass | Cold | -001 | X | | X | X | | | | X | | | | |
| 6/29/16 | 1:15 | | SL-2 | | | -002 | X | | X | X | | | | X | | | | |
| 6/29/16 | 1:30 | | SL-3 | | | -003 | X | | X | X | | | | X | | | | |
| 6/29/16 | 3:55 | | SL-5 | | | -004 | X | | X | X | | | | X | | | | |
| 6/29/16 | 10:30 | | SL-6 | | | -005 | X | | X | X | | | | X | | | | |
| 6/29/16 | 1:45 | | SL-8 | | | -006 | X | | X | X | | | | X | | | | |

JV

| Date | Time | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 6/29/16 | 17:30 | Justin Valder | Chris Walters | 6/29/16 | 1730 |
| 6/30/16 | 1851 | Chris Walters | Jai Kent | 06/30/16 | 0805 |

Remarks: Per Heather no Cl or NO3 analysis
9/6/30

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*

July 06, 2016

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

RE: San Juan 28-7 153 E OrderNo.: 1606G66

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 6/30/2016 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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Project:** San Juan 28-7 153 E
**Lab ID:** 1606G66-001 **Matrix:** SOIL

**Client Sample ID:** SC-4
**Collection Date:** 6/29/2016 10:20:00 AM
**Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | 35 | 30 | | mg/Kg | 20 | 6/30/2016 11:37:12 AM | 26172 |
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1100 | 51 | | mg/Kg | 5 | 6/30/2016 10:18:37 AM | 26166 |
| Surr: DNOP | 97.4 | 70-130 | | %Rec | 5 | 6/30/2016 10:18:37 AM | 26166 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 1100 | 220 | | mg/Kg | 50 | 6/30/2016 9:37:08 AM | A35340 |
| Surr: BFB | 187 | 80-120 | S | %Rec | 50 | 6/30/2016 9:37:08 AM | A35340 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 1.1 | | mg/Kg | 50 | 6/30/2016 9:37:08 AM | B35340 |
| Toluene | 7.5 | 2.2 | | mg/Kg | 50 | 6/30/2016 9:37:08 AM | B35340 |
| Ethylbenzene | 4.2 | 2.2 | | mg/Kg | 50 | 6/30/2016 9:37:08 AM | B35340 |
| Xylenes, Total | 53 | 4.3 | | mg/Kg | 50 | 6/30/2016 9:37:08 AM | B35340 |
| Surr: 4-Bromofluorobenzene | 108 | 80-120 | | %Rec | 50 | 6/30/2016 9:37:08 AM | B35340 |

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:** San Juan 28-7 153 E
**Collection Date:** 6/29/2016 4:00:00 PM
**Lab ID:** 1606G66-002 **Matrix:** SOIL **Received Date:** 6/30/2016 8:05:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 300.0: ANIONS** | | | | | | Analyst: **MRA** | |
| Chloride | ND | 30 | | mg/Kg | 20 | 6/30/2016 11:49:36 AM | 26172 |
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1400 | 46 | | mg/Kg | 5 | 6/30/2016 10:40:15 AM | 26166 |
| Surr: DNOP | 102 | 70-130 | | %Rec | 5 | 6/30/2016 10:40:15 AM | 26166 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 1600 | 200 | | mg/Kg | 50 | 6/30/2016 10:00:38 AM | A35340 |
| Surr: BFB | 222 | 80-120 | S | %Rec | 50 | 6/30/2016 10:00:38 AM | A35340 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 1.2 | 1.0 | | mg/Kg | 50 | 6/30/2016 10:00:38 AM | B35340 |
| Toluene | 32 | 2.0 | | mg/Kg | 50 | 6/30/2016 10:00:38 AM | B35340 |
| Ethylbenzene | 8.5 | 2.0 | | mg/Kg | 50 | 6/30/2016 10:00:38 AM | B35340 |
| Xylenes, Total | 110 | 4.1 | | mg/Kg | 50 | 6/30/2016 10:00:38 AM | B35340 |
| Surr: 4-Bromofluorobenzene | 113 | 80-120 | | %Rec | 50 | 6/30/2016 10:00:38 AM | B35340 |

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#: **1606G66**

*06-Jul-16*

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153 E

| Sample ID **MB-26172** | SampType: **mblk** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26172** | RunNo: **35353** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093623** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | ND | 1.5 | | | | | | | | |

| Sample ID **LCS-26172** | SampType: **lcs** | TestCode: **EPA Method 300.0: Anions** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26172** | RunNo: **35353** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093624** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Chloride | 14 | 1.5 | 15.00 | 0 | 96.6 | 90 | 110 | | | |

**Qualifiers:**

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

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: **1606G66**

***06-Jul-16***

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153 E

| Sample ID **LCS-26166** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26166** | RunNo: **35333** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093148** 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 | 82.6 | 62.6 | 124 | | | |
| Surr: DNOP | 4.4 | | 5.000 | | 87.3 | 70 | 130 | | | |

| Sample ID **MB-26166** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26166** | RunNo: **35333** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093149** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 9.7 | | 10.00 | | 97.1 | 70 | 130 | | | |

| Sample ID **1606G66-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-4** | Batch ID: **26166** | RunNo: **35333** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093361** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 1200 | 49 | 49.07 | 1132 | 191 | 33.9 | 141 | | | S |
| Surr: DNOP | 4.8 | | 4.907 | | 98.2 | 70 | 130 | | | |

| Sample ID **1606G66-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-4** | Batch ID: **26166** | RunNo: **35333** |
| Prep Date: **6/30/2016** | Analysis Date: **6/30/2016** | SeqNo: **1093386** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 1100 | 50 | 49.70 | 1132 | -31.7 | 33.9 | 141 | 9.35 | 20 | S |
| Surr: DNOP | 4.8 | | 4.970 | | 96.3 | 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#: **1606G66**

*06-Jul-16*

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153 E

| Sample ID **5ML RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **A35340** | RunNo: **35340** |
| Prep Date: | Analysis Date: **6/30/2016** | SeqNo: **1093812** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 990 | | 1000 | | 99.0 | 80 | 120 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **A35340** | RunNo: **35340** |
| Prep Date: | Analysis Date: **6/30/2016** | SeqNo: **1093813** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 104 | 80 | 120 | | | |
| Surr: BFB | 1100 | | 1000 | | 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#: **1606G66**

***06-Jul-16***

**Client:** Rule Engineering LLC

**Project:** San Juan 28-7 153 E

| Sample ID **5ML RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B35340** | RunNo: **35340** |
| Prep Date: | Analysis Date: **6/30/2016** | SeqNo: **1093842** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.94 | | 1.000 | | 93.9 | 80 | 120 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B35340** | RunNo: **35340** |
| Prep Date: | Analysis Date: **6/30/2016** | SeqNo: **1093843** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.0 | 0.025 | 1.000 | 0 | 104 | 75.3 | 123 | | | |
| Toluene | 1.0 | 0.050 | 1.000 | 0 | 103 | 80 | 124 | | | |
| Ethylbenzene | 1.0 | 0.050 | 1.000 | 0 | 104 | 82.8 | 121 | | | |
| Xylenes, Total | 3.1 | 0.10 | 3.000 | 0 | 102 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 106 | 80 | 120 | | | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| 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: 1606G66  RcptNo: 1

Received by/date: JA 06/30/16

Logged By: Anne Thorne  6/30/2016 8:05:00 AM  Anne Thorne

Completed By: Anne Thorne  6/30/2016  Anne Thorne

Reviewed By: 06/30/16

## 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 | 1.1 | 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#: jvaldez@ruleengineering.com

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

Accreditation: NELAP ☐ Other

EDD (Type)

Turn-Around Time: Same Day ☐ Standard ☑ Rush 1 Day

Project Name: San Juan 28-7 153E

Project #:

Project Manager: Heather Woods

Sampler: Justin Valdez

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.1

**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 # (6/30/16 Meoh Kit) | Preservative Type | HEAL No. | BTEX + ~~MTBE~~ + ~~TMB's~~ (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / ~~MRO~~) | TPH (Method 418.1) | EDB (Method 504.1) | PAH's (8310 or 8270 SIMS) | RCRA 8 Metals | Anions (~~F~~, Cl, ~~NO3~~, NO2, PO4, SO4) | 8081 Pesticides / 8082 PCB's | 8260B (VOA) | 8270 (Semi-VOA) | | | | | Air Bubbles (Y or N) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 6/29/16 | 10:20 | Soil | SC-4 | (1) 4oz Glass | Cold | 001 | X | | X | X | | | | X | | | | | | | | |
| 6/29/16 | 4:00 | Soil | SC-7 | (1) 4oz Glass | Cold | 002 | X | | X | X | | | | X | | | | | | | | |

Date: 6/29/16 Time: 5:30 Relinquished by: Justin Valdez

Received by: Christine Walker Date: 6/29/16 Time: 1730

Date: 6/29/16 Time: 1851 Relinquished by: Christine Walker

Received by: Jessica Cruz Date: 06/30/16 Time: 0805

Remarks: No 418.1 per Heather 6/30

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*

July 22, 2016

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

RE: COP San Juan 28-7 153E OrderNo.: 1607694

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 4 sample(s) on 7/15/2016 for the analyses presented in the following report.

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

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

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

Sincerely,

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Client Sample ID:** SC-2R
**Project:** COP San Juan 28-7 153E
**Collection Date:** 7/14/2016 2:05:00 PM
**Lab ID:** 1607694-001 **Matrix:** SOIL **Received Date:** 7/15/2016 7:50:00 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 | 7/19/2016 6:28:56 PM | 26444 |
| Surr: DNOP | 103 | 70-130 | | %Rec | 1 | 7/19/2016 6:28:56 PM | 26444 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.8 | | mg/Kg | 1 | 7/18/2016 9:51:24 AM | 26415 |
| Surr: BFB | 84.2 | 80-120 | | %Rec | 1 | 7/18/2016 9:51:24 AM | 26415 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 7/18/2016 9:51:24 AM | 26415 |
| Toluene | ND | 0.048 | | mg/Kg | 1 | 7/18/2016 9:51:24 AM | 26415 |
| Ethylbenzene | ND | 0.048 | | mg/Kg | 1 | 7/18/2016 9:51:24 AM | 26415 |
| Xylenes, Total | ND | 0.097 | | mg/Kg | 1 | 7/18/2016 9:51:24 AM | 26415 |
| Surr: 4-Bromofluorobenzene | 93.2 | 80-120 | | %Rec | 1 | 7/18/2016 9:51:24 AM | 26415 |

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 28-7 153E
**Lab ID:** 1607694-002 **Matrix:** SOIL

**Client Sample ID:** SC-3R
**Collection Date:** 7/14/2016 1:10:00 PM
**Received Date:** 7/15/2016 7:50:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | ND | 9.5 | | mg/Kg | 1 | 7/19/2016 7:34:29 PM | 26444 |
| Surr: DNOP | 99.9 | 70-130 | | %Rec | 1 | 7/19/2016 7:34:29 PM | 26444 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | mg/Kg | 1 | 7/18/2016 11:04:22 AM | 26415 |
| Surr: BFB | 85.9 | 80-120 | | %Rec | 1 | 7/18/2016 11:04:22 AM | 26415 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 7/18/2016 11:04:22 AM | 26415 |
| Toluene | ND | 0.050 | | mg/Kg | 1 | 7/18/2016 11:04:22 AM | 26415 |
| Ethylbenzene | ND | 0.050 | | mg/Kg | 1 | 7/18/2016 11:04:22 AM | 26415 |
| Xylenes, Total | ND | 0.10 | | mg/Kg | 1 | 7/18/2016 11:04:22 AM | 26415 |
| Surr: 4-Bromofluorobenzene | 97.6 | 80-120 | | %Rec | 1 | 7/18/2016 11:04:22 AM | 26415 |

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 28-7 153E
**Lab ID:** 1607694-003 **Matrix:** SOIL

**Client Sample ID:** SC-7R
**Collection Date:** 7/14/2016 1:15:00 PM
**Received Date:** 7/15/2016 7:50:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 1200 | 99 | | mg/Kg | 10 | 7/20/2016 11:32:23 AM | 26444 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/20/2016 11:32:23 AM | 26444 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 540 | 48 | | mg/Kg | 10 | 7/18/2016 11:28:43 AM | 26415 |
| Surr: BFB | 260 | 80-120 | S | %Rec | 10 | 7/18/2016 11:28:43 AM | 26415 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.24 | | mg/Kg | 10 | 7/18/2016 11:28:43 AM | 26415 |
| Toluene | 7.2 | 0.48 | | mg/Kg | 10 | 7/18/2016 11:28:43 AM | 26415 |
| Ethylbenzene | 3.5 | 0.48 | | mg/Kg | 10 | 7/18/2016 11:28:43 AM | 26415 |
| Xylenes, Total | 47 | 0.95 | | mg/Kg | 10 | 7/18/2016 11:28:43 AM | 26415 |
| Surr: 4-Bromofluorobenzene | 112 | 80-120 | | %Rec | 10 | 7/18/2016 11:28:43 AM | 26415 |

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-8R
**Project:** COP San Juan 28-7 153E
**Collection Date:** 7/14/2016 1:20:00 PM
**Lab ID:** 1607694-004 **Matrix:** SOIL **Received Date:** 7/15/2016 7:50:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 2100 | 93 | | mg/Kg | 10 | 7/20/2016 12:00:12 PM | 26444 |
| Surr: DNOP | 0 | 70-130 | S | %Rec | 10 | 7/20/2016 12:00:12 PM | 26444 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | 3100 | 240 | | mg/Kg | 50 | 7/18/2016 11:53:04 AM | 26415 |
| Surr: BFB | 202 | 80-120 | S | %Rec | 50 | 7/18/2016 11:53:04 AM | 26415 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | 3.9 | 1.2 | | mg/Kg | 50 | 7/18/2016 11:53:04 AM | 26415 |
| Toluene | 78 | 2.4 | | mg/Kg | 50 | 7/18/2016 11:53:04 AM | 26415 |
| Ethylbenzene | 15 | 2.4 | | mg/Kg | 50 | 7/18/2016 11:53:04 AM | 26415 |
| Xylenes, Total | 200 | 4.8 | | mg/Kg | 50 | 7/18/2016 11:53:04 AM | 26415 |
| Surr: 4-Bromofluorobenzene | 106 | 80-120 | | %Rec | 50 | 7/18/2016 11:53:04 AM | 26415 |

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#: **1607694**

*22-Jul-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28-7 153E

| Sample ID **1607694-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-2R** | Batch ID: **26444** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/19/2016** | SeqNo: **1108673** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 50 | 9.9 | 49.31 | 0 | 102 | 33.9 | 141 | | | |
| Surr: DNOP | 5.2 | | 4.931 | | 106 | 70 | 130 | | | |

| Sample ID **LCS-26444** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26444** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/19/2016** | SeqNo: **1108676** 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 | 96.9 | 62.6 | 124 | | | |
| Surr: DNOP | 5.1 | | 5.000 | | 102 | 70 | 130 | | | |

| Sample ID **MB-26444** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26444** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/19/2016** | SeqNo: **1108679** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 11 | | 10.00 | | 107 | 70 | 130 | | | |

| Sample ID **1607694-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-2R** | Batch ID: **26444** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/19/2016** | SeqNo: **1108706** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 50 | 9.8 | 48.78 | 0 | 102 | 33.9 | 141 | 0.938 | 20 | |
| Surr: DNOP | 5.1 | | 4.878 | | 105 | 70 | 130 | 0 | 0 | |

| Sample ID **LCS-26455** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26455** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/20/2016** | SeqNo: **1108851** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 5.0 | | 5.000 | | 99.7 | 70 | 130 | | | |

| Sample ID **MB-26455** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26455** | RunNo: **35794** |
| Prep Date: **7/18/2016** | Analysis Date: **7/20/2016** | SeqNo: **1108853** Units: **%Rec** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Surr: DNOP | 10 | | 10.00 | | 102 | 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#: **1607694**

*22-Jul-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28-7 153E

| Sample ID | **LCS-26464** | SampType: **LCS** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: **26464** | | | RunNo: **35794** | | | | | |
| Prep Date: | **7/19/2016** | Analysis Date: **7/20/2016** | | | SeqNo: **1109636** | | Units: **%Rec** | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | | 5.9 | | 5.000 | | 118 | 70 | 130 | | | |

| Sample ID | **MB-26464** | SampType: **MBLK** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: **26464** | | | RunNo: **35794** | | | | | |
| Prep Date: | **7/19/2016** | Analysis Date: **7/20/2016** | | | SeqNo: **1109637** | | Units: **%Rec** | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | | 11 | | 10.00 | | 107 | 70 | 130 | | | |

| Sample ID | **LCS-26443** | SampType: **LCS** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **LCSS** | Batch ID: **26443** | | | RunNo: **35827** | | | | | |
| Prep Date: | **7/18/2016** | Analysis Date: **7/20/2016** | | | SeqNo: **1110532** | | Units: **%Rec** | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | | 4.5 | | 5.000 | | 89.6 | 70 | 130 | | | |

| Sample ID | **MB-26443** | SampType: **MBLK** | | | TestCode: **EPA Method 8015M/D: Diesel Range Organics** | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Client ID: | **PBS** | Batch ID: **26443** | | | RunNo: **35827** | | | | | |
| Prep Date: | **7/18/2016** | Analysis Date: **7/20/2016** | | | SeqNo: **1110534** | | Units: **%Rec** | | | |
| Analyte | | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | | 8.8 | | 10.00 | | 87.5 | 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#: **1607694**

*22-Jul-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28-7 153E

| Sample ID **MB-26415** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107183** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 890 | | 1000 | | 88.6 | 80 | 120 | | | |

| Sample ID **LCS-26415** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107184** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 29 | 5.0 | 25.00 | 0 | 117 | 80 | 120 | | | |
| Surr: BFB | 870 | | 1000 | | 86.6 | 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#: **1607694**

*22-Jul-16*

**Client:** Rule Engineering LLC

**Project:** COP San Juan 28-7 153E

| Sample ID **MB-26415** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107222** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 101 | 80 | 120 | | | |

| Sample ID **LCS-26415** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107223** 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 | 98.8 | 75.3 | 123 | | | |
| Toluene | 0.85 | 0.050 | 1.000 | 0 | 85.3 | 80 | 124 | | | |
| Ethylbenzene | 0.85 | 0.050 | 1.000 | 0 | 84.5 | 82.8 | 121 | | | |
| Xylenes, Total | 2.6 | 0.10 | 3.000 | 0 | 86.0 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 0.89 | | 1.000 | | 89.3 | 80 | 120 | | | |

| Sample ID **1607694-001AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **SC-2R** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107225** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.95 | 0.023 | 0.9398 | 0 | 101 | 71.5 | 122 | | | |
| Toluene | 0.83 | 0.047 | 0.9398 | 0 | 88.8 | 71.2 | 123 | | | |
| Ethylbenzene | 0.84 | 0.047 | 0.9398 | 0 | 89.6 | 75.2 | 130 | | | |
| Xylenes, Total | 2.6 | 0.094 | 2.820 | 0 | 91.0 | 72.4 | 131 | | | |
| Surr: 4-Bromofluorobenzene | 0.91 | | 0.9398 | | 96.6 | 80 | 120 | | | |

| Sample ID **1607694-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **SC-2R** | Batch ID: **26415** | RunNo: **35780** |
| Prep Date: **7/15/2016** | Analysis Date: **7/18/2016** | SeqNo: **1107226** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.90 | 0.024 | 0.9737 | 0 | 92.1 | 71.5 | 122 | 5.89 | 20 | |
| Toluene | 0.79 | 0.049 | 0.9737 | 0 | 80.8 | 71.2 | 123 | 6.01 | 20 | |
| Ethylbenzene | 0.79 | 0.049 | 0.9737 | 0 | 80.6 | 75.2 | 130 | 6.95 | 20 | |
| Xylenes, Total | 2.4 | 0.097 | 2.921 | 0 | 81.9 | 72.4 | 131 | 7.05 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.94 | | 0.9737 | | 96.2 | 80 | 120 | 0 | 0 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| 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: 1607694  RcptNo: 1

Received by/date: LAH 07/15/16

Logged By: Anne Thorne 7/15/2016 7:50:00 AM

Completed By: Anne Thorne 7/15/2016

Reviewed By: 07/15/16

## Chain of Custody

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

## Log In

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

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

Adjusted? _____

Checked by: _____

## Special Handling (if applicable)

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

Person Notified: _____ Date _____

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

Regarding: _____

Client Instructions: _____

17. Additional remarks:

18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|---|---|---|---|---|---|---|
| 1 | 1.4 | Good | | | | |

# 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 San Juan 28-7 #153E

Project #:

Project Manager:
Heather Woods

Sampler: H.W.

On Ice: ☑ Yes ☐ No

Sample Temperature: 1.4


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


Analysis Request

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1607694 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/14/16 | 1405 | Soil | SC-2R | (1) 4 oz Glass | Cold | 001 | X | | X | | | | | | | | | | | | | |
| 7/14/16 | 1310 | Soil | SC-3R | (1) 4 oz Glass | Cold | 002 | X | | X | | | | | | | | | | | | | |
| 7/14/16 | 1315 | Soil | SC-7R | (1) 4 oz Glass | Cold | 003 | X | | X | | | | | | | | | | | | | |
| 7/14/16 | 1320 | Soil | SC-8R | (1) 4 oz Glass | Cold | 004 | X | | X | | | | | | | | | | | | | |

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 7/14/16 | 1806 | Heather M. Woods | Christine Walls | 7/14/16 | 1806 |
| 7/15/16 | 1941 | Christine Walls | | 07/15/16 | 0750 |

Remarks: Direct Bill to ~~Chevron~~ ConocoPhillips
WO: 21435822
User: KGARCIA
Supervisor: Ervin Wyckoff
Area: 7
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*

July 19, 2016

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

RE: CoP San Juan 28-7 153E OrderNo.: 1607769

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/16/2016 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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Client Sample ID:** SC-4R
**Project:** CoP San Juan 28-7 153E
**Collection Date:** 7/15/2016 11:20:00 AM
**Lab ID:** 1607769-001
**Matrix:** MEOH (SOIL)
**Received Date:** 7/16/2016 8:45:00 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 | 7/18/2016 1:03:16 PM | 26439 |
| Surr: DNOP | 93.0 | 70-130 | | %Rec | 1 | 7/18/2016 1:03:16 PM | 26439 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 7/18/2016 9:46:44 AM | A35768 |
| Surr: BFB | 94.8 | 80-120 | | %Rec | 1 | 7/18/2016 9:46:44 AM | A35768 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.025 | | mg/Kg | 1 | 7/18/2016 9:46:44 AM | B35768 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 7/18/2016 9:46:44 AM | B35768 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 7/18/2016 9:46:44 AM | B35768 |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 7/18/2016 9:46:44 AM | B35768 |
| Surr: 4-Bromofluorobenzene | 91.9 | 80-120 | | %Rec | 1 | 7/18/2016 9:46:44 AM | B35768 |

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 San Juan 28-7 153E
**Collection Date:** 7/15/2016 12:30:00 PM
**Lab ID:** 1607769-002
**Matrix:** MEOH (SOIL)
**Received Date:** 7/16/2016 8:45:00 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 | 7/18/2016 1:31:27 PM | 26439 |
| Surr: DNOP | 94.2 | 70-130 | | %Rec | 1 | 7/18/2016 1:31:27 PM | 26439 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **NSB** | |
| Gasoline Range Organics (GRO) | ND | 4.8 | | mg/Kg | 1 | 7/18/2016 10:10:13 AM | A35768 |
| Surr: BFB | 94.3 | 80-120 | | %Rec | 1 | 7/18/2016 10:10:13 AM | A35768 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **NSB** | |
| Benzene | ND | 0.024 | | mg/Kg | 1 | 7/18/2016 10:10:13 AM | B35768 |
| Toluene | ND | 0.048 | | mg/Kg | 1 | 7/18/2016 10:10:13 AM | B35768 |
| Ethylbenzene | ND | 0.048 | | mg/Kg | 1 | 7/18/2016 10:10:13 AM | B35768 |
| Xylenes, Total | ND | 0.096 | | mg/Kg | 1 | 7/18/2016 10:10:13 AM | B35768 |
| Surr: 4-Bromofluorobenzene | 90.3 | 80-120 | | %Rec | 1 | 7/18/2016 10:10:13 AM | B35768 |

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#: **1607769**

*19-Jul-16*

**Client:** Rule Engineering LLC

**Project:** CoP San Juan 28-7 153E

| Sample ID **LCS-26439** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26439** | RunNo: **35765** |
| Prep Date: **7/18/2016** | Analysis Date: **7/18/2016** | SeqNo: **1106622** 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 | 99.7 | 62.6 | 124 | | | |
| Surr: DNOP | 4.8 | | 5.000 | | 95.5 | 70 | 130 | | | |

| Sample ID **MB-26439** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26439** | RunNo: **35765** |
| Prep Date: **7/18/2016** | Analysis Date: **7/18/2016** | SeqNo: **1106623** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 8.5 | | 10.00 | | 84.6 | 70 | 130 | | | |

| Sample ID **1607769-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-4R** | Batch ID: **26439** | RunNo: **35765** |
| Prep Date: **7/18/2016** | Analysis Date: **7/18/2016** | SeqNo: **1106737** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 55 | 10 | 50.71 | 2.022 | 104 | 33.9 | 141 | | | |
| Surr: DNOP | 5.0 | | 5.071 | | 97.8 | 70 | 130 | | | |

| Sample ID **1607769-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **SC-4R** | Batch ID: **26439** | RunNo: **35765** |
| Prep Date: **7/18/2016** | Analysis Date: **7/18/2016** | SeqNo: **1106791** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | 52 | 9.8 | 48.78 | 2.022 | 103 | 33.9 | 141 | 5.23 | 20 | |
| Surr: DNOP | 4.8 | | 4.878 | | 98.9 | 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#: **1607769**

*19-Jul-16*

**Client:** Rule Engineering LLC

**Project:** CoP San Juan 28-7 153E

| Sample ID **5ML RB** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **A35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107116** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | |
| Surr: BFB | 1000 | | 1000 | | 99.7 | 80 | 120 | | | |

| Sample ID **2.5UG GRO LCS** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **A35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107117** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 25 | 5.0 | 25.00 | 0 | 100 | 80 | 120 | | | |
| Surr: BFB | 1100 | | 1000 | | 109 | 80 | 120 | | | |

| Sample ID **1607769-001AMS** | SampType: **MS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **SC-4R** | Batch ID: **A35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107118** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 26 | 4.9 | 24.56 | 0 | 105 | 59.3 | 143 | | | |
| Surr: BFB | 1100 | | 982.3 | | 112 | 80 | 120 | | | |

| Sample ID **1607769-001AMSD** | SampType: **MSD** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **SC-4R** | Batch ID: **A35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107119** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 25 | 4.9 | 24.56 | 0 | 103 | 59.3 | 143 | 2.73 | 20 | |
| Surr: BFB | 1100 | | 982.3 | | 111 | 80 | 120 | 0 | 0 | |

**Qualifiers:**

| | | | |
|---|---|---|---|
| * | Value exceeds Maximum Contaminant Level. | B | Analyte detected in the associated Method Blank |
| D | Sample Diluted Due to Matrix | E | Value above quantitation range |
| H | Holding times for preparation or analysis exceeded | J | Analyte detected below quantitation limits |
| ND | Not Detected at the Reporting Limit | P | Sample pH Not In Range |
| 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#: **1607769**

*19-Jul-16*

**Client:** Rule Engineering LLC

**Project:** CoP San Juan 28-7 153E

| Sample ID **5ML RB** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **B35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107152** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.025 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 0.96 | | 1.000 | | 96.2 | 80 | 120 | | | |

| Sample ID **100NG BTEX LCS** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **B35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107153** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.91 | 0.025 | 1.000 | 0 | 90.5 | 75.3 | 123 | | | |
| Toluene | 0.91 | 0.050 | 1.000 | 0 | 91.4 | 80 | 124 | | | |
| Ethylbenzene | 0.96 | 0.050 | 1.000 | 0 | 96.1 | 82.8 | 121 | | | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 95.8 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 102 | 80 | 120 | | | |

| Sample ID **1607769-002AMS** | SampType: **MS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **SC-9** | Batch ID: **B35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107154** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.0 | 0.024 | 0.9606 | 0.01166 | 103 | 71.5 | 122 | | | |
| Toluene | 0.97 | 0.048 | 0.9606 | 0.01789 | 99.6 | 71.2 | 123 | | | |
| Ethylbenzene | 0.99 | 0.048 | 0.9606 | 0 | 103 | 75.2 | 130 | | | |
| Xylenes, Total | 2.9 | 0.096 | 2.882 | 0.03384 | 100 | 72.4 | 131 | | | |
| Surr: 4-Bromofluorobenzene | 0.95 | | 0.9606 | | 99.4 | 80 | 120 | | | |

| Sample ID **1607769-002AMSD** | SampType: **MSD** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **SC-9** | Batch ID: **B35768** | RunNo: **35768** |
| Prep Date: | Analysis Date: **7/18/2016** | SeqNo: **1107155** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 0.91 | 0.024 | 0.9606 | 0.01166 | 93.7 | 71.5 | 122 | 9.49 | 20 | |
| Toluene | 0.94 | 0.048 | 0.9606 | 0.01789 | 96.3 | 71.2 | 123 | 3.25 | 20 | |
| Ethylbenzene | 0.98 | 0.048 | 0.9606 | 0 | 102 | 75.2 | 130 | 0.654 | 20 | |
| Xylenes, Total | 2.9 | 0.096 | 2.882 | 0.03384 | 101 | 72.4 | 131 | 0.616 | 20 | |
| Surr: 4-Bromofluorobenzene | 0.96 | | 0.9606 | | 99.6 | 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: 1607769  RcptNo: 1

Received by/date: LM 07/16/16

Logged By: Joe Archuleta 7/16/2016 8:45:00 AM JCA

Completed By: Joe Archuleta 7/16/2016 12:52:05 PM JCA

Reviewed By: JJ 07/18/16

## 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 | 3.8 | Good | Yes | | | |

# Chain-of-Custody Record

Client: Ruby Engineering, LLC

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

Phone #: (505) 716-2787

email or Fax#: hwoods@rubyengineering.com

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

Accreditation
☐ NELAP ☐ Other _____

☐ EDD (Type) _____

Turn-Around Time:
☐ Standard ☒ Rush Same Day

Project Name:
CoP San Juan 28-7 #153E

Project #:

Project Manager:
Heather Woods

Sampler: Heather Woods / Justin Valdez
On Ice: ☒ Yes ☐ No
Sample Temperature: 3.8

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

**Analysis Request**

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1607769 | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7/15/16 | 1120 | Soil | SC-4R | (1) 4oz Glass | Cold | -001 | X | X | | | | | | | | | |
| 7/15/16 | 1230 | Soil | SC-9 | (1) 4oz Glass | cold | -002 | X | X | | | | | | | | | |

NFS HW

| Date: | Time: | Relinquished by: | Received by: | Date | Time |
|---|---|---|---|---|---|
| 7/15/16 | 1715 | Heather M. Woods | Maria Wade | 7/15/16 | 1715 |
| 7/15/16 | 1841 | Maria Wade | | 7/16/16 | 0845 |

Remarks: Direct Bill to ConocoPhillips
WO: 21435822
User: KGARCIA
Supervisor: Ervin Wyckoff
Ordered by: Lisa Hunter

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 16, 2016

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

RE: 28-7 153E OrderNo.: 1608717

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 8/12/2016 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

# Hall Environmental Analysis Laboratory, Inc.

**CLIENT:** Rule Engineering LLC
**Client Sample ID:** SC-8R(2)
**Project:** 28-7 153E
**Collection Date:** 8/11/2016 11:45:00 AM
**Lab ID:** 1608717-001 **Matrix:** SOIL **Received Date:** 8/12/2016 7:30:00 AM

| Analyses | Result | PQL | Qual | Units | DF | Date Analyzed | Batch |
|---|---|---|---|---|---|---|---|
| **EPA METHOD 8015M/D: DIESEL RANGE ORGANICS** | | | | | | Analyst: **TOM** | |
| Diesel Range Organics (DRO) | 500 | 9.2 | | mg/Kg | 1 | 8/12/2016 4:39:54 PM | 26954 |
| Surr: DNOP | 95.0 | 70-130 | | %Rec | 1 | 8/12/2016 4:39:54 PM | 26954 |
| **EPA METHOD 8015D: GASOLINE RANGE** | | | | | | Analyst: **RAA** | |
| Gasoline Range Organics (GRO) | 260 | 95 | | mg/Kg | 20 | 8/15/2016 1:10:33 PM | 26953 |
| Surr: BFB | 109 | 68.3-144 | | %Rec | 20 | 8/15/2016 1:10:33 PM | 26953 |
| **EPA METHOD 8021B: VOLATILES** | | | | | | Analyst: **RAA** | |
| Benzene | 0.40 | 0.38 | | mg/Kg | 20 | 8/15/2016 1:10:33 PM | 26953 |
| Toluene | 9.9 | 0.95 | | mg/Kg | 20 | 8/15/2016 1:10:33 PM | 26953 |
| Ethylbenzene | 1.9 | 0.95 | | mg/Kg | 20 | 8/15/2016 1:10:33 PM | 26953 |
| Xylenes, Total | 30 | 1.9 | | mg/Kg | 20 | 8/15/2016 1:10:33 PM | 26953 |
| Surr: 4-Bromofluorobenzene | 105 | 80-120 | | %Rec | 20 | 8/15/2016 1:10:33 PM | 26953 |

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#: **1608717**

*16-Aug-16*

**Client:** Rule Engineering LLC

**Project:** 28-7 153E

| Sample ID **LCS-26954** | SampType: **LCS** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26954** | RunNo: **36459** |
| Prep Date: **8/12/2016** | Analysis Date: **8/12/2016** | SeqNo: **1129462** 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 | 81.5 | 62.6 | 124 | | | |
| Surr: DNOP | 4.0 | | 5.000 | | 79.5 | 70 | 130 | | | |

| Sample ID **MB-26954** | SampType: **MBLK** | TestCode: **EPA Method 8015M/D: Diesel Range Organics** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26954** | RunNo: **36459** |
| Prep Date: **8/12/2016** | Analysis Date: **8/12/2016** | SeqNo: **1129463** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Diesel Range Organics (DRO) | ND | 10 | | | | | | | | |
| Surr: DNOP | 8.4 | | 10.00 | | 83.5 | 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#: **1608717**

*16-Aug-16*

**Client:** Rule Engineering LLC

**Project:** 28-7 153E

| Sample ID **MB-26953** | SampType: **MBLK** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26953** | RunNo: **36508** |
| Prep Date: **8/12/2016** | Analysis Date: **8/15/2016** | SeqNo: **1130701** 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 | 760 | | 1000 | | 75.7 | 68.3 | 144 | | | |

| Sample ID **LCS-26953** | SampType: **LCS** | TestCode: **EPA Method 8015D: Gasoline Range** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26953** | RunNo: **36508** |
| Prep Date: **8/12/2016** | Analysis Date: **8/15/2016** | SeqNo: **1130702** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Gasoline Range Organics (GRO) | 20 | 5.0 | 25.00 | 0 | 81.2 | 80 | 120 | | | |
| Surr: BFB | 860 | | 1000 | | 85.6 | 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#: **1608717**

*16-Aug-16*

**Client:** Rule Engineering LLC

**Project:** 28-7 153E

| Sample ID **MB-26953** | SampType: **MBLK** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **PBS** | Batch ID: **26953** | RunNo: **36508** |
| Prep Date: **8/12/2016** | Analysis Date: **8/15/2016** | SeqNo: **1130726** 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 | | 99.8 | 80 | 120 | | | |

| Sample ID **LCS-26953** | SampType: **LCS** | TestCode: **EPA Method 8021B: Volatiles** |
|---|---|---|
| Client ID: **LCSS** | Batch ID: **26953** | RunNo: **36508** |
| Prep Date: **8/12/2016** | Analysis Date: **8/15/2016** | SeqNo: **1130727** Units: **mg/Kg** |

| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | 1.0 | 0.025 | 1.000 | 0 | 100 | 75.3 | 123 | | | |
| Toluene | 1.0 | 0.050 | 1.000 | 0 | 102 | 80 | 124 | | | |
| Ethylbenzene | 0.96 | 0.050 | 1.000 | 0 | 96.4 | 82.8 | 121 | | | |
| Xylenes, Total | 2.9 | 0.10 | 3.000 | 0 | 95.8 | 83.9 | 122 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 110 | 80 | 120 | | | |

**Qualifiers:**

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

ENVIRONMENTAL ANALYSIS LABORATORY

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

# Sample Log-In Check List

Client Name: RULE ENGINEERING LL  Work Order Number: 1608717  RcptNo: 1

Received by/date: KM 08/12/16

Logged By: Ashley Gallegos 8/12/2016 7:30:00 AM AG

Completed By: Ashley Gallegos 8/12/2016 9:35:19 AM AG

Reviewed By: JA 08/12/16

## 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 | 3.0 | 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 #: 505 793 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 3 Day

Project Name: 28-7 153 E

Project #:

Project Manager: Heather Woods

Sampler: Justin Valder

On Ice: ☑ Yes ☐ No

Sample Temperature: 4.0-1.0=3.0

| Date | Time | Matrix | Sample Request ID | Container Type and # | Preservative Type | HEAL No. 1608717 | BTEX + [redacted] (8021) | BTEX + MTBE + TPH (Gas only) | TPH 8015B (GRO / DRO / [redacted]) | 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) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8/11/16 | 1145 | soil | SC-8R(2) | 4oz Glass | Cold | -001 | X | | X | | | | | | | | | | | | | |

Date: 8/11/16 Time: 1640 Relinquished by: Justin Valder Received by: Heather M. Woods Date: 8/11/16 Time: 1640

Date: 8/11/16 Time: 1800 Relinquished by: Heather M. Woods Received by: [signature] Date: 8/11/16 Time: 1800

Remarks: Per Heather change to next day rush of 8/12

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.