

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

OIL CONS. DIV DIST. 3

MAY 26 2015

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

| | |
|--|-------------------------------------|
| Name of Company Burlington Resources, a Wholly Owned Subsidiary of ConocoPhillips Company | Contact Lisa Hunter |
| Address 3401 East 30th St, Farmington, NM | Telephone No. (505) 326-9786 |
| Facility Name: Arizona Jicarilla A #5A | Facility Type: Gas Well |

| | | |
|--------------------------------|------------------------------------|---------------------------|
| Surface Owner Jicarilla | Mineral Owner Contract #124 | API No. 3003922797 |
|--------------------------------|------------------------------------|---------------------------|

LOCATION OF RELEASE

| | | | | | | | | |
|-------------------------|----------------------|------------------------|---------------------|------------------------------|----------------------------------|-------------------------------|-------------------------------|-----------------------------|
| Unit Letter K | Section 13 | Township 25N | Range 04W | Feet from the 1710 | North/South Line South | Feet from the 1730' | East/West Line West | County Rio Arriba |
|-------------------------|----------------------|------------------------|---------------------|------------------------------|----------------------------------|-------------------------------|-------------------------------|-----------------------------|

Latitude 36.39654 Longitude -107.20703

NATURE OF RELEASE

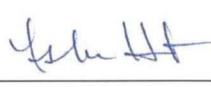
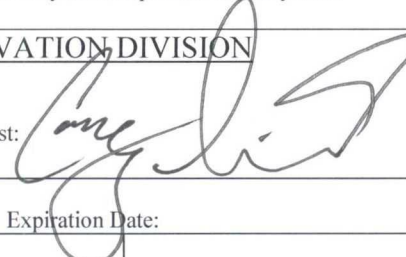
| | | |
|--|---|--|
| Type of Release Condensate & Produced Water | Volume of Release 23 bbls Condensate/5 bbls Prod Water | Volume Recovered 0 bbls |
| Source of Release Production Tank | Date and Hour of Occurrence Unknown | Date and Hour of Discovery 02/18/15 @ 12:00 pm |
| Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required | If YES, To Whom? Bryce Hammond (Jicarilla) Cory Smith (NMOCD) | |
| By Whom? Lisa Hunter | Date and Hour Bryce Hammond on 02/19/15 @ 10:49 (via phone & email) NMOCD on 02/19/15 @ 10:49 (via voicemail & email) | |
| Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No | If YES, Volume Impacting the Watercourse. N/A | |

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

Describe Cause of Problem and Remedial Action Taken.* ☐ While gauging tank, MSO found the tank to be 28 bbls less than last month's gauge on 1.19.15. Examined tank for sign of release & found a puddle approximately 1 ft in diameter near and outside the grade band. The area had been covered in snow until previous weekend, and a location visit the week prior did not indicate a release. Shut oil dump line, and called truck to remove the remaining fluid from tank. Tank will be cleaned and inspected for corrosion.

Describe Area Affected and Cleanup Action Taken.*
ConocoPhillips will assess the soil to determine a path forward for clean-up if necessary. Excavation was 37' x 26' x 10' Deep. 468 c/yds of soil was transported to Envirotech Land Farm and 468c/yds of clean soil was transported from Jicarilla Tribal Land Stock Pond, and placed in the excavation site. Analytical results were above the regulatory standards at sandstone base. OCD and Jicarilla EPO approved spraying of Potassium Permanganate and backfill. No further action required. The soil sampling report is attached for review.

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

| | | |
|--|---|-----------------------------------|
| Signature:  | OIL CONSERVATION DIVISION | |
| Printed Name: Lisa Hunter | Approved by Environmental Specialist:  | |
| Title: Field Environmental Specialist | Approval Date: 6/30/15 | Expiration Date: |
| E-mail Address: Lisa.Hunter@cop.com | Conditions of Approval: | Attached <input type="checkbox"/> |
| Date: May 26, 2015 | Phone: (505) 258-1607 | |

* Attach Additional Sheets If Necessary

#NCS 1507250108

Hunter, Lisa

From: Smith, Cory, EMNRD <Cory.Smith@state.nm.us>
Sent: Wednesday, April 08, 2015 2:27 PM
To: Hunter, Lisa; Hobson Sandoval
Cc: Powell, Brandon, EMNRD; Kurt Sandoval; Bryce Hammond; Debbie Watson; Bassett, Jarrell (Producers Assistance Corp.); Smith, Mike W
Subject: [EXTERNAL]RE: Arizona Jicarilla A #5A

Lisa,

OCD is approving COPC request to spray potassium permanganate in the excavation at the Arizona Jicarilla A#5A, due to reaching vertical extent via sandstone.

Please include a copy of this email, in your Final C-141 for closure.

OCD approval does not relieve COPC of any additional requirements imposed by other regulatory agencies.

If you have any questions please call me.

Thank you,

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

-----Original Message-----

From: Hunter, Lisa [<mailto:Lisa.Hunter@conocophillips.com>]
Sent: Wednesday, April 08, 2015 2:04 PM
To: Hobson Sandoval; Smith, Cory, EMNRD
Cc: Kurt Sandoval; Bryce Hammond; Kelly, Jonathan, EMNRD; Debbie Watson; Bassett, Jarrell (Producers Assistance Corp.); Smith, Mike W
Subject: Arizona Jicarilla A #5A

As per our conversation earlier today the walls of the excavation if the Arizona Jicarilla A 5A were below the required 100 ppm TPH. However, the base of the excavation is at dense sandstone and Field sample result is at 1533 ppm for TPH.

COPC requests permission to spray the sandstone base with potassium permanganate and backfill the excavation.

API # 3003922797
sec 13, T25N, R04W

Please let me know if you have any questions.

Lisa Hunter
Field Environmental Specialist
ConocoPhillips HSE

Sent from my iPhone

Arizona Jicarilla A No. 5A
Release Report
Unit Letter K, Section 13, Township 25N, Range 04W
N36.39687, W107.20688
Rio Arriba County, New Mexico
May 15, 2015

Prepared for:

ConocoPhillips
San Juan Business Unit
5525 Highway 64
Farmington, New Mexico 87401

Prepared by:

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

ConocoPhillips Arizona Jicarilla A No. 5A Release Report

Prepared for:

ConocoPhillips
San Juan Business Unit
5525 Highway 64
Farmington, New Mexico 87401

Prepared by:

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



Deborah Watson, PG, Geologist

Reviewed by:



Russell Knight, PG, Principal Hydrogeologist

May 15, 2015

Table of Contents

| | | |
|---|-------------------------------|---|
| 1 | Introduction | 1 |
| 2 | Release Summary | 1 |
| 3 | Site Ranking | 1 |
| 4 | Field Activities | 2 |
| 5 | Soil Sampling | 2 |
| 6 | Conclusions | 3 |
| 7 | Closure and Limitations | 4 |

Tables

| | |
|---------|---|
| Table 1 | EPO/NMOCD Site Ranking Determination |
| Table 2 | Release Assessment Soil Sampling Results-VOCs and TPH |
| Table 3 | Excavation Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH |

Figures

| | |
|----------|--|
| Figure 1 | Topographic Map |
| Figure 2 | Aerial Site Map |
| Figure 3 | Release Assessment Soil Analytical Map |
| Figure 4 | Excavation Clearance Soil Analytical Map |

Appendices

| | |
|------------|-------------------------------|
| Appendix A | Analytical Laboratory Reports |
|------------|-------------------------------|

1 Introduction

A release of approximately 23 barrels (bbl) of condensate and 5 bbl of produced water was discovered at the ConocoPhillips Arizona Jicarilla A No 5A well pad on February 18, 2015. The release occurred at corrosion holes located along the base of the 210 barrel (bbl) production tank. The ConocoPhillips Arizona Jicarilla A No. 5A well pad is located in Unit Letter C, Section 14, Township 23N, Range 7W in Rio Arriba County, New Mexico on the Jicarilla Apache Nation.

Remedial activities included delineation of the release, excavation of hydrocarbon impacted soils, and application of potassium permanganate to the base of the excavation. A topographic map of the location is included as Figure 1 and an aerial site map is included as Figure 2.

2 Release Summary

Site Name – Arizona Jicarilla A No 5A

Location – Unit Letter K (NE/SW), Section 13, Township 25N, Range 04W

API Number – 30-039-22797

Location Latitude/Longitude – N36.39687 and W107.20688, respectively

Release Latitude/Longitude – N36.39654 and W107.20703, respectively

Land Jurisdiction – Jicarilla Apache Nation

Date Release Discovered – February 18, 2015

Agency Notification – Jicarilla Apache Nation Environmental Protection Office (EPO) and New Mexico Oil Conservation Division (NMOCD)

Agency Jurisdiction – EPO and NMOCD

Source of Release – corrosion hole(s) bottom of 210 bbl production tank

Release Contents –condensate and produced water

Release Volume – 28 bbl (23 bbl condensate and 5 bbl produced water)

EPO/NMOCD Ranking – 20

Date(s) of Rule Engineering, LLC (Rule) Field Work –February 26 and April 8, 2015

Subcontractor(s) – M & M Trucking (MMT) and Envirotech Inc. (Envirotech)

Disposal Facility – Envirotech Land Farm (Permit #NM-01-011)

Amount of Contaminated Soil Excavated/Disposed – estimated 468 cubic yards

3 Site Ranking

The Arizona Jicarilla A No. 5A is located on the Jicarilla Apache Nation and follows recommendations from Jicarilla Apache Nation Environmental Protection Office (EPO) In accordance with EPO and New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 20 (Table 1). Based on the ranking score of 20, action levels for remediated soils at the site are as follows: 10 mg/kg benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 100 mg/kg total petroleum hydrocarbons (TPH).

Arizona Jicarilla A No. 5A Release Report

Depth to groundwater at the site was estimated to be between 50 and 99 feet below ground surface (bgs) based on the elevation differential (65 feet) between the release location and the wash in Canyon de los Ojitos (approximately 0.3 miles southeast).

A review was completed of the New Mexico Office of the State Engineer online New Mexico Water Rights Reporting System and no water wells were identified within a 1,000 feet radius of the location.

The nearest surface water, a stock pond is located approximately 560 feet west of the location. An additional surface water feature (an unnamed wash) is located approximately 890 feet west of the location.

4 Field Activities

On February 26, 2015, Rule personnel conducted a release assessment to determine the horizontal and vertical extent of the 28 bbl release. The release assessment included installation of 9 soil borings (SB-1 through SB-9) and collection of 20 soil samples. Figure 3 provides the locations and field results of the soil samples collected during the release assessment.

On April 7, 2015, MMT excavated the petroleum impacted materials from within the release area. On April 7, 2015, based on visual observation and the presence of a sandstone layer at 9 to 10 feet below grade, the excavation was halted. On April 8, 2015, Rule personnel collected five confirmation samples (SC-1 through SC-5) from each of the sidewalls and base of the excavation. Approximately 468 cubic yards of impacted soils were removed from an area of excavation measuring approximately 37 feet x 24 (to 26) feet x 9 (to 10) feet in depth. Figure 4 provides the locations and results of the soil samples collected during the excavation clearance. On April 10, 2015, Envirotech applied potassium permanganate to the base of the location. Following application of potassium permanganate, the excavation was backfilled with clean fill dirt.

5 Soil Sampling

Release Assessment

Rule collected 20 discrete soil samples from 9 soil borings (SB-1 through SB-9) during the release assessment on February 26, 2015. A portion of each soil sample was field screened for volatile organic compounds (VOCs) and a portion of selected soil samples were analyzed for total petroleum hydrocarbons (TPH) per U.S. Environmental Protection Agency (USEPA) Method 418.1.

Field screening for VOC vapors was conducted with a photo-ionization detector (PID). Before beginning field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas.

Field analysis for TPH was conducted using 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.

Field sampling results exceeded EPO/NMOCD action levels for VOCs in samples collected from SB-1 through SB-4, with the highest concentration reported in SB-4 with 4,543 ppm. TPH concentrations also exceeded the EPO/NMOCD action level of 100 mg/kg TPH in SB-1 through SB-4. The highest TPH concentration was reported in SB-3 with 4,145 mg/kg. Field sampling results from the release assessment are summarized in Table 2 and presented on Figure 3.

Excavation Clearance

Rule collected five confirmation soil samples from the sidewalls and base of the excavation. Soil samples SC-1 through SC-5 were collected on April 9, 2015. Each soil sample was collected as a composite of sub-samples from within the sample locations. A portion of each composite soil sample was field screened for VOCs and field analyzed for TPH per USEPA Method 418.1.

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 for gasoline range organics (GRO) and diesel range organics (DRO) per USEPA Method 8015D.

Field sampling results for soil confirmation sample SC-1 collected from the base, exceeded EPO/NMOCD action levels for VOCs and TPH with 2,406 ppm and 1,530 mg/kg, respectively. Laboratory analytical results for SC-1 exceeded EPO/NMOCD action levels for total BTEX and TPH (GRO+DRO) with 61 mg/kg and 1,200 mg/kg, respectively. Field results for soil confirmation samples SC-2 through SC-5 reported VOCs and TPH concentrations below the EPO/NMOCD action levels of 100 ppm and 100 mg/kg, respectively. Laboratory analytical results for soil confirmation samples SC-2 through SC-5 reported benzene, total BTEX, and TPH (GRO+DRO) concentrations below the applicable EPO/NMOCD action levels. Field sampling and laboratory analytical results are summarized in Table 3 and presented on Figure 4. The analytical laboratory reports are included in Appendix A.

6 Conclusions

On February 18, 2015, a release of approximately 23 bbl of condensate and 5 bbl of produced water from the onsite production tank was discovered on the ConocoPhillips Arizona Jicarilla A No 5A well pad. The release was a result of corrosion hole(s) located along the base of the tank. Remedial activities included delineation of the release, excavation of hydrocarbon impacted soils from beneath the production tank, and application of potassium permanganate to the base of the excavation.

Arizona Jicarilla A No. 5A Release Report

A release assessment was conducted on February 26, 2015 where 9 soil borings were sampled to define the extent of impacts. Sample results from the release assessment indicated that limited excavation was necessary to meet the EPO/NMOCD action levels for a site ranking score of 20. The impacted soils were excavated on April 7, 2015. The final excavation measured approximately 32 feet x 8 feet x 9 (to 10) feet in depth, and was limited vertically by a sandstone layer at 9 (to 10) feet bgs. Five confirmation soil samples were collected from the sidewalls and base of the final excavation. Field and laboratory results for the excavation samples were below EPO/NMOCD action levels in all samples with the exception of the base. Further excavation of the base was not practical due to the presence of sandstone bedrock.

Based on the field screening results from April 9, 2015, and the presence of a sandstone layer at 9 (to 10) feet, Hobson Sandoval, EPO representative, and Cory Smith, NMOCD representative, approved backfilling of the excavation following the application of potassium permanganate.

Based on laboratory analytical results (sidewalls), presence of sandstone bedrock, and application of potassium permanganate (base), no further work is recommended.

7 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 proposal, the report, and Rule's 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 2. Release Assessment Soil Sampling Results-VOCs and TPH
Arizona Jicarilla A No. 5A
Rio Arriba County, New Mexico
ConocoPhillips

| Sample ID | Date | Sample Depth (ft bgs) | VOCs* (PID) (ppm) | TPH* (418.1) (mg/kg) |
|----------------------------------|------------|--------------------------|----------------------|-------------------------|
| EPO/NMOCD Action Levels** | | | 100 | 100 |
| SB-1 | Feb 26, 15 | 0.0 | 3,442 | 3,755 |
| SB-2 | Feb 26, 15 | 1.5 | 3,003 | --- |
| | | 3.0 | 2,588 | 2,225 |
| SB-3 | Feb 26, 15 | 0.0 | 371 | --- |
| | | 3.0 | 2,981 | 4,145 |
| | | 5.5 | 3,101 | --- |
| | | 8.0 | 3,131 | 151 |
| SB-4 | Feb 26, 15 | 3.0 | 4,245 | 2,112 |
| | | 5.0 | 4,543 | --- |
| | | 10.0 | 1,275 | 205 |
| SB-5 | Feb 26, 15 | 0.0 | 1.0 | --- |
| | | 3.0 | 0.7 | 44.3 |
| SB-6 | Feb 26, 15 | 0.0 | 23.6 | --- |
| | | 2.0 | 15.9 | 33.5 |
| SB-7 | Feb 26, 15 | 1.5 | 0.4 | --- |
| | | 3.0 | 0.6 | 30.8 |
| SB-8 | Feb 26, 15 | 1.5 | 1.1 | --- |
| | | 4.0 | 0.6 | 33.5 |
| SB-9 | Feb 26, 15 | 1.5 | 1.9 | --- |
| | | 3.0 | 1.6 | 64.5 |

Notes:

* field results

VOCs - volatile organic compounds

PID - photo-ionization detector

ft bgs - feet below ground surface

ppm - parts per million

mg/kg - milligrams/kilograms

BTEX - benzene, toluene, ethylbenzene, and xylenes

TPH-total petroleum hydrocarbons per USEPA Method 418.1

**NMOCD Guidelines for Remediation of Leaks, Spills, and Releases (1993)

Table 1. EPO/NMOCD Site Ranking Determination
Arizona Jicarilla 5 No. 5A
Rio Arriba County, New Mexico
ConocoPhillips

| Ranking Criteria | Ranking Score | Site-Based Ranking Score | Basis for Determination | Data Sources |
|--|---------------|--------------------------|--|--|
| | | | | |
| Depth to Groundwater | | | | |
| <50 feet | 20 | 10 | Elevation differential (65 feet) between the location and the wash in Canyon de los Ojitos. Water well SJ 0224 located approximately 5,000 feet northeast of the location and at a similar elevation, reported depth to water at 56 feet below ground surface. | NMOCD Online database, Schmitz Ranch 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 feet radius of location. | NMOSE NMWRRS, Schmitz Ranch Quadrangle, Google Earth, and Visual Inspection |
| | 0 (No) | | | |
| | | | | |
| Distance to Surface Water Body | | | | |
| <200 horizontal feet | 20 | 10 | Stock pond (dry) located approximately 560 feet west of the site. An unnamed wash which drains to wash in Canon de los Ojitos is located approximately 890 feet west of the site. | Schmitz Ranch Quadrangle, Google Earth, and Visual Inspection |
| 200 to 1,000 horizontal feet | 10 | | | |
| >1,000 horizontal feet | 0 | | | |
| | | | | |
| Site Based Total Ranking Score | | 20 | | |

Figures

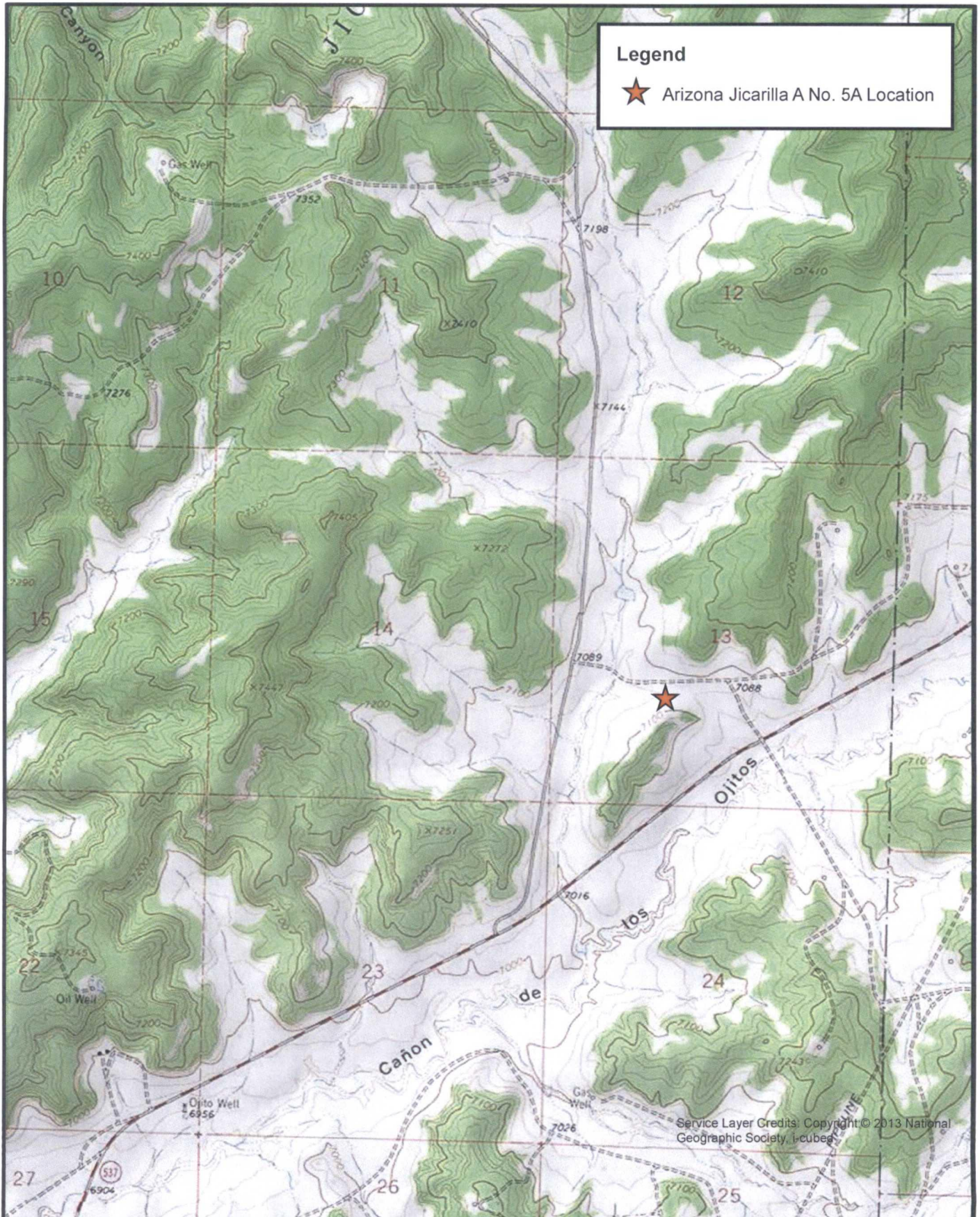
Table 3. Excavation Clearance Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH
Arizona Jicarilla A No 5A
Rio Arriba County, New Mexico
ConocoPhillips

| Sample ID | Date | Location | Sample Depth (ft bgs) | VOCs* (PID) (ppm) | TPH* (418.1) (mg/kg) | Benzene (mg/kg) | Total BTEX (mg/kg) | TPH-GRO | TPH-DRO |
|---------------------------|------------|------------|--------------------------|----------------------|-------------------------|--------------------|-----------------------|---------|---------|
| | | | | | | | | (mg/kg) | |
| EPO/NMOCD Action Levels** | | | | 100 | 100 | 10 | 50 | 100 | |
| SC-1 | Apr 08, 15 | Base | 9 to 10 | 2,406 | 1,530 | 0.52 | 61 | 830 | 370 |
| SC-2 | Apr 08, 15 | North Wall | 0 to 9 | 0.7 | 47.6 | <0.049 | <0.245 | <4.9 | <10 |
| SC-3 | Apr 08, 15 | South Wall | 0 to 10 | 3.8 | 47.6 | <0.046 | <0.229 | <4.6 | <9.6 |
| SC-4 | Apr 08, 15 | East Wall | 0 to 10 | 0.9 | 51.5 | <0.048 | <0.240 | <4.8 | <9.8 |
| SC-5 | Apr 08, 15 | West Wall | 0 to 10 | 7.3 | 38.4 | <0.049 | <0.245 | <4.9 | <9.7 |

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

Legend

★ Arizona Jicarilla A No. 5A Location



Rule Engineering, LLC
Solutions to Regulations for Industry

0 1,000 2,000 3,000 4,000 Feet

Location
K, S13, T25N, R4W
N36.39687, W107.20688
Rio Arriba County, New Mexico

Topographic Map
ConocoPhillips
Arizona Jicarilla A No. 5A
API: 30-039-22797

Date: 5/15/2015 File: 150414 Topographic Map

Figure: 1

Legend

- ★ Well Head
- Above ground storage tank (AST)
- Below grade tank (BGT)
- Cribbing
- ▨ Separator
- Berm
- Working Surface
- Fence

Release Location:
N36.39654, W107.20703

AST

BGT

Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Rule Engineering, LLC
Solutions to Regulations for Industry

0 10 20 30 40 Feet



Location
K, S13, T25N, R4W
N36.39687, W107.20688
Rio Arriba County, New Mexico

Aerial Site Map
ConocoPhillips
Arizona Jicarilla A No. 5A
API: 30-039-22797

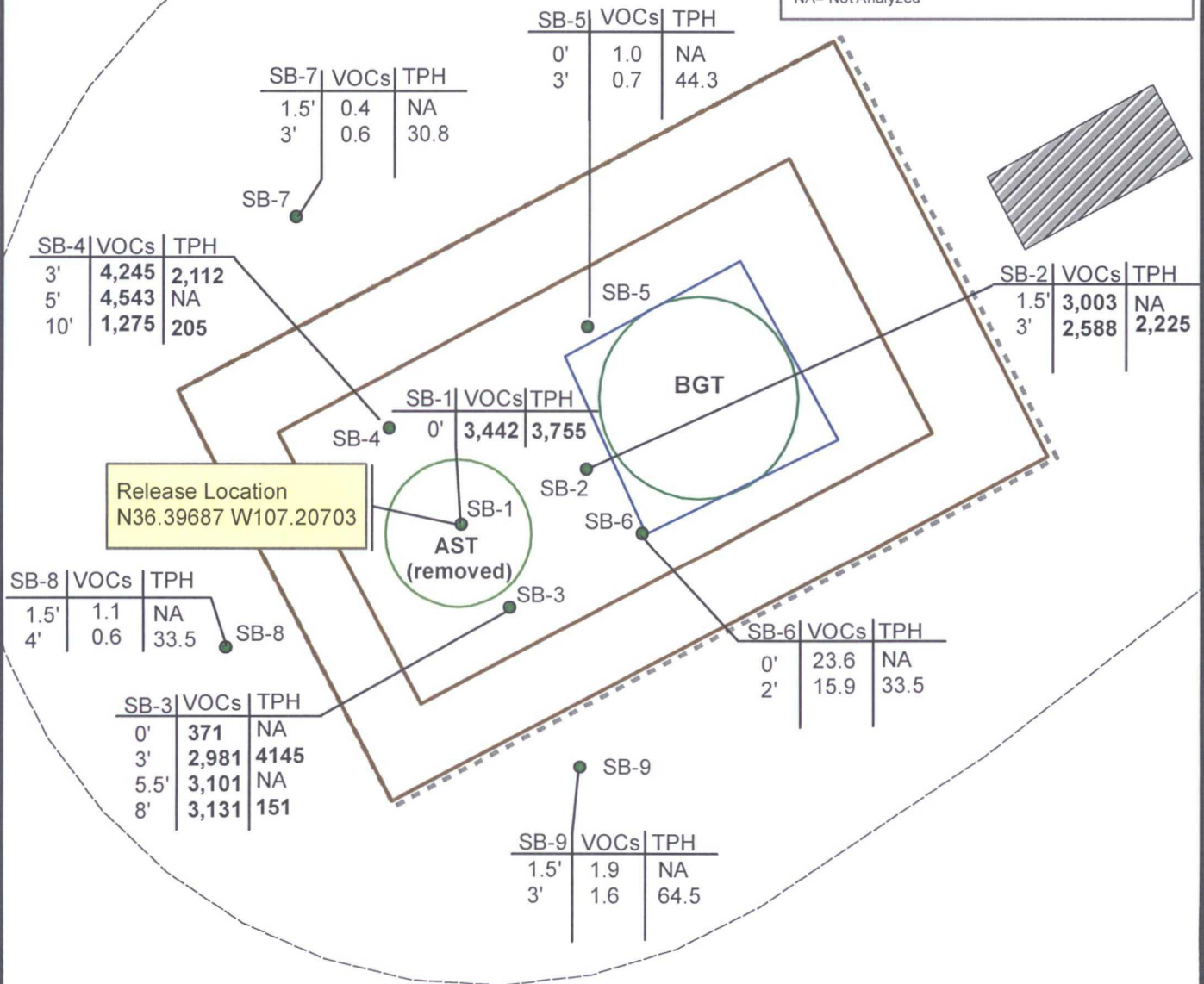
Date: 5/15/2015 File: 150414 Aerial Site Map

Figure 2









Legend

- Soil Boring
- ▭ Berm
- ▭ Fence
- Aboveground storage tank (AST)
- Cribbing
- ▨ Separator
- Below grade tank (BGT)
- Working Surface

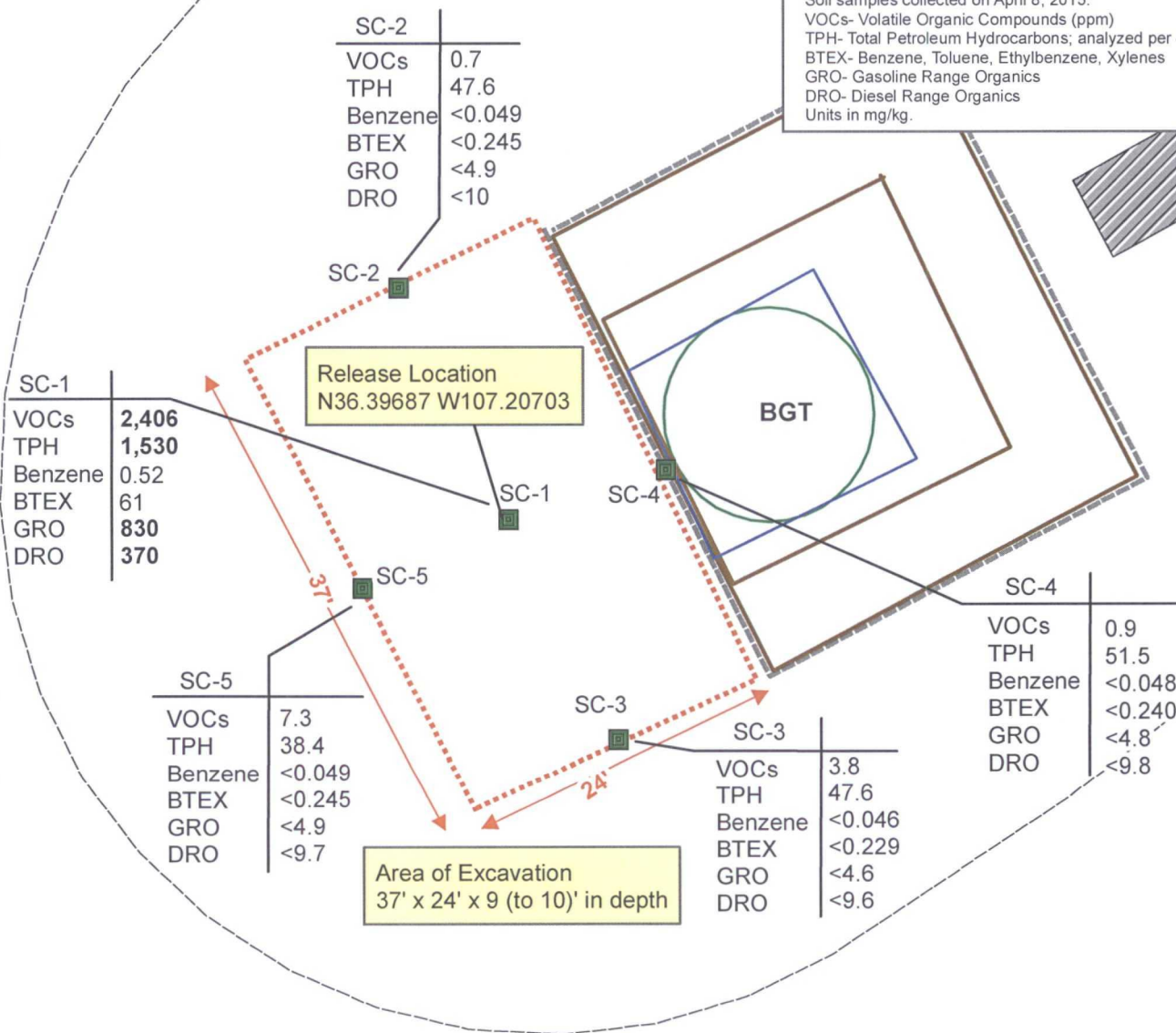
Soil samples collected on February 26, 2015.
 VOCs- Volatile Organic Compounds (ppm)
 Total Petroleum Hydrocarbons (TPH) analyzed per 418.1.
 TPH units: mg/kg
 NA= Not Analyzed



Legend

-  Soil Sample Location
-  Area of Excavation
-  Cribbing
-  Separator
-  Berm
-  Below grade tank (BGT)
-  Working Surface
-  Fence

Soil samples collected on April 8, 2015.
 VOCs- Volatile Organic Compounds (ppm)
 TPH- Total Petroleum Hydrocarbons; analyzed per 418.1
 BTEX- Benzene, Toluene, Ethylbenzene, Xylenes
 GRO- Gasoline Range Organics
 DRO- Diesel Range Organics
 Units in mg/kg.





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

April 14, 2015

Deborah Watson

Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: CoP Arizona Jicarilla A No 5 A

OrderNo.: 1504417

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 1 sample(s) on 4/9/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Appendix A

Analytical Laboratory Reports

Analytical ReportLab Order **1504417**Date Reported: **4/14/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-1**Project:** CoP Arizona Jicarilla A No 5 A**Collection Date:** 4/8/2015 10:30:00 AM**Lab ID:** 1504417-001**Matrix:** SOIL**Received Date:** 4/9/2015 8:09:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015D: DIESEL RANGE ORGANICS | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | 370 | 9.8 | | mg/Kg | 1 | 4/10/2015 3:46:11 PM | 18604 |
| Surr: DNOP | 98.3 | 63.5-128 | | %REC | 1 | 4/10/2015 3:46:11 PM | 18604 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | 830 | 98 | | mg/Kg | 20 | 4/10/2015 11:28:26 AM | 18596 |
| Surr: BFB | 156 | 80-120 | S | %REC | 20 | 4/10/2015 11:28:26 AM | 18596 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | 0.52 | 0.49 | | mg/Kg | 20 | 4/10/2015 11:28:26 AM | 18596 |
| Toluene | 9.1 | 0.98 | | mg/Kg | 20 | 4/10/2015 11:28:26 AM | 18596 |
| Ethylbenzene | 4.5 | 0.98 | | mg/Kg | 20 | 4/10/2015 11:28:26 AM | 18596 |
| Xylenes, Total | 47 | 2.0 | | mg/Kg | 20 | 4/10/2015 11:28:26 AM | 18596 |
| Surr: 4-Bromofluorobenzene | 111 | 80-120 | | %REC | 20 | 4/10/2015 11:28:26 AM | 18596 |

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 |
| | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| | O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | Spike Recovery outside accepted recovery limits | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504417

14-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5 A

| | | | | | | | | | | |
|-----------------------------|----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | MB-18604 | | SampType: MBLK | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | PBS | | Batch ID: 18604 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753569 | | 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 | 9.6 | | 10.00 | | 95.9 | 63.5 | 128 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | MB-18616 | | SampType: MBLK | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | PBS | | Batch ID: 18616 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753570 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 9.5 | | 10.00 | | 94.7 | 63.5 | 128 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | LCS-18604 | | SampType: LCS | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 18604 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753572 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 53 | 10 | 50.00 | 0 | 106 | 67.8 | 130 | | | |
| Surr: DNOP | 4.5 | | 5.000 | | 89.3 | 63.5 | 128 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|---|----------|-------------|------|----------|------|
| Sample ID | LCS-18616 | | SampType: LCS | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 18616 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753573 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: DNOP | 4.5 | | 5.000 | | 89.3 | 63.5 | 128 | | | |

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504417

14-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5 A

| | | | | | | | | | | |
|-------------------------------|----------|-----|--------------------------|-------------|--|----------|--------------|------|----------|------|
| Sample ID | MB-18596 | | SampType: MBLK | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | | Batch ID: 18596 | | RunNo: 25429 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 752655 | | 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-18596 | | SampType: LCS | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | | Batch ID: 18596 | | RunNo: 25429 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 752656 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 103 | 64 | 130 | | | |
| Surr: BFB | 950 | | 1000 | | 94.7 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID | MB-18613 | | SampType: MBLK | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | | Batch ID: 18613 | | RunNo: 25449 | | | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: 4/11/2015 | | SeqNo: 753290 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 890 | | 1000 | | 88.8 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|-----------|--------------------------|-----------|-------------|--|----------|-------------|------|----------|------|
| Sample ID | LCS-18613 | SampType: LCS | | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | Batch ID: 18613 | | | RunNo: 25449 | | | | | |
| Prep Date: | 4/10/2015 | Analysis Date: 4/11/2015 | | | SeqNo: 753291 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 960 | | 1000 | | 96.3 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|-----------|--------------------------|-----------|-------------|--|----------|-------------|------|----------|------|
| Sample ID | MB-18615 | SampType: MBLK | | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | PBS | Batch ID: 18615 | | | RunNo: 25449 | | | | | |
| Prep Date: | 4/10/2015 | Analysis Date: 4/11/2015 | | | SeqNo: 753308 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 910 | | 1000 | | 90.7 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|-----------|-----|--------------------------|-------------|--|----------|-------------|------|----------|------|
| Sample ID | LCS-18615 | | SampType: LCS | | TestCode: EPA Method 8015D: Gasoline Range | | | | | |
| Client ID: | LCSS | | Batch ID: 18615 | | RunNo: 25449 | | | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: 4/11/2015 | | SeqNo: 753309 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 980 | | 1000 | | 97.8 | 80 | 120 | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504417

14-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5 A

| | | | | | | | | | | |
|----------------------------|----------|-------|----------------|-------------|------|-----------|-----------------------------|------|--------------|------|
| Sample ID | MB-18596 | | SampType: | MBLK | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | PBS | | Batch ID: | 18596 | | RunNo: | 25429 | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: | 4/10/2015 | | SeqNo: | 752689 | | Units: mg/Kg | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 102 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-------|----------------|-------------|------|-----------|-----------------------------|------|--------------|------|
| Sample ID | LCS-18596 | | SampType: | LCS | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | LCSS | | Batch ID: | 18596 | | RunNo: | 25429 | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: | 4/10/2015 | | SeqNo: | 752690 | | Units: mg/Kg | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 1.2 | 0.050 | 1.000 | 0 | 115 | 76.6 | 128 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 106 | 75 | 124 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 113 | 79.5 | 126 | | | |
| Xylenes, Total | 3.4 | 0.10 | 3.000 | 0 | 113 | 78.8 | 124 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 108 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-----|----------------|-------------|------|-----------|-----------------------------|------|-------------|------|
| Sample ID | MB-18613 | | SampType: | MBLK | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | PBS | | Batch ID: | 18613 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753332 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 100 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-----|----------------|-------------|------|-----------|-----------------------------|------|-------------|------|
| Sample ID | LCS-18613 | | SampType: | LCS | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | LCSS | | Batch ID: | 18613 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753333 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 107 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-----|----------------|-------------|------|-----------|-----------------------------|------|-------------|------|
| Sample ID | MB-18615 | | SampType: | MBLK | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | PBS | | Batch ID: | 18615 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753339 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 105 | 80 | 120 | | | |

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504417

14-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5 A

| | | | | | | | | | | |
|----------------------------|-----------|-----|----------------|-------------|------|-----------|-----------------------------|------|-------------|------|
| Sample ID | LCS-18615 | | SampType: | LCS | | TestCode: | EPA Method 8021B: Volatiles | | | |
| Client ID: | LCSS | | Batch ID: | 18615 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753340 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 108 | 80 | 120 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



Hall Environmental Analysis Laboratory
4961 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: 1504417

RcptNo: 1

Received by/date:

AG

04/09/15

Logged By: Lindsay Mangin

4/9/2015 8:09:00 AM

Lindsay Mangin

Completed By: Lindsay Mangin

4/9/2015 10:39:42 AM

Lindsay Mangin

Reviewed By:

JA

04/09/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.0 | Good | Yes | | | |



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

April 15, 2015

Deborah Watson
Rule Engineering LLC
501 Airport Dr., Ste 205
Farmington, NM 87401
TEL: (505) 860-2712
FAX

RE: CoP Arizona Jicarilla A No 5A

OrderNo.: 1504411

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 4 sample(s) on 4/9/2015 for the analyses presented in the following report.

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

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

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

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman
Laboratory Manager
4901 Hawkins NE
Albuquerque, NM 87109

Turn-Around Time:

Client: Rule Engineering LLC

Mailing Address: 501 Airport Drive
Suite 205 Farmington NM 87401
Phone #: 505 866 2717

email or Fax#:

2A/QC Package:

☒ Standard ☐ Level 4 (Full Validation)

Accreditation

☐ NELAP ☐ Other _____☐ EDD (Type)

Project Name:

CoP
Arizona/Carilla 4 No 5A
Project #:

Project Manager:

S Watson

Sampler: D Watson

On Ice: ☒ Yes ☐ No

Sample Temperature: 10

| Date | Time | Matrix | Sample Request ID |
|------|------|--------|-------------------|
|------|------|--------|-------------------|

Container
Type and #Preservative
Type

HEAL Nq.

| | | | | | | |
|--------|------|-----|------|-----------|------|------|
| 4-8-15 | 1030 | Snd | SC-1 | 2-Hozakys | Cold | -001 |
|--------|------|-----|------|-----------|------|------|

| | |
|---|--|
| X | BTEX + 五氯苯 + 三氯苯 '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)

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: | Relinquished by: |
| 1/8/15 | 1701 | Debrah Wpton |

| | | |
|--------|-------|------------------|
| Date: | Time: | Relinquished by: |
| 1/8/15 | 1815 | Christine Waelen |

| | | |
|--------------------|--------|------|
| Received by: | Date | Time |
| <i>Chris Wachs</i> | 4/8/15 | 1701 |

Received by: Amalugos Date 04/09/15 Time 08:05

Remarks: Bull to ConocoPhillips

Wo: 20697391

Area: 26
user: KGARCIA

Act Code: D26D

Supervisor: Mike Smith

ordered by: Jerrell Bassett

Analytical ReportLab Order **1504411**Date Reported: **4/15/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-2**Project:** CoP Arizona Jicarilla A No 5A**Collection Date:** 4/8/2015 10:15:00 AM**Lab ID:** 1504411-001**Matrix:** SOIL**Received Date:** 4/9/2015 8:09:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|---------------------|
| EPA METHOD 8015D: DIESEL RANGE ORGANICS | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | ND | 10 | | mg/Kg | 1 | 4/10/2015 11:43:02 AM | 18604 |
| Surr: DNOP | 98.3 | 63.5-128 | | %REC | 1 | 4/10/2015 11:43:02 AM | 18604 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/10/2015 11:57:11 AM | 18596 |
| Surr: BFB | 86.9 | 80-120 | | %REC | 1 | 4/10/2015 11:57:11 AM | 18596 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 11:57:11 AM | 18596 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 11:57:11 AM | 18596 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 11:57:11 AM | 18596 |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 4/10/2015 11:57:11 AM | 18596 |
| Surr: 4-Bromofluorobenzene | 96.7 | 80-120 | | %REC | 1 | 4/10/2015 11:57:11 AM | 18596 |

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 |
| | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| | O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | Spike Recovery outside accepted recovery limits | | |

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-3

Project: CoP Arizona Jicarilla A No 5A

Collection Date: 4/8/2015 10:18:00 AM

Lab ID: 1504411-002

Matrix: SOIL

Received Date: 4/9/2015 8:09:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|-----------------------|--------------|
| EPA METHOD 8015D: DIESEL RANGE ORGANICS | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | ND | 9.6 | | mg/Kg | 1 | 4/10/2015 1:04:00 PM | 18604 |
| Surr: DNOP | 99.9 | 63.5-128 | | %REC | 1 | 4/10/2015 1:04:00 PM | 18604 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.6 | | mg/Kg | 1 | 4/14/2015 12:02:25 PM | 18657 |
| Surr: BFB | 88.6 | 80-120 | | %REC | 1 | 4/14/2015 12:02:25 PM | 18657 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.046 | | mg/Kg | 1 | 4/14/2015 12:02:25 PM | 18657 |
| Toluene | ND | 0.046 | | mg/Kg | 1 | 4/14/2015 12:02:25 PM | 18657 |
| Ethylbenzene | ND | 0.046 | | mg/Kg | 1 | 4/14/2015 12:02:25 PM | 18657 |
| Xylenes, Total | ND | 0.091 | | mg/Kg | 1 | 4/14/2015 12:02:25 PM | 18657 |
| Surr: 4-Bromofluorobenzene | 99.6 | 80-120 | | %REC | 1 | 4/14/2015 12:02:25 PM | 18657 |

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 |
| | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| | O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | Spike Recovery outside accepted recovery limits | | |

Analytical Report

Lab Order 1504411

Date Reported: 4/15/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: CoP Arizona Jicarilla A No 5A

Collection Date: 4/8/2015 10:22:00 AM

Lab ID: 1504411-003

Matrix: SOIL

Received Date: 4/9/2015 8:09:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015D: DIESEL RANGE ORGANICS | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | ND | 9.8 | | mg/Kg | 1 | 4/10/2015 1:30:58 PM | 18604 |
| Surr: DNOP | 97.7 | 63.5-128 | | %REC | 1 | 4/10/2015 1:30:58 PM | 18604 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.8 | | mg/Kg | 1 | 4/10/2015 8:05:16 PM | 18596 |
| Surr: BFB | 93.3 | 80-120 | | %REC | 1 | 4/10/2015 8:05:16 PM | 18596 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.048 | | mg/Kg | 1 | 4/10/2015 8:05:16 PM | 18596 |
| Toluene | ND | 0.048 | | mg/Kg | 1 | 4/10/2015 8:05:16 PM | 18596 |
| Ethylbenzene | ND | 0.048 | | mg/Kg | 1 | 4/10/2015 8:05:16 PM | 18596 |
| Xylenes, Total | ND | 0.096 | | mg/Kg | 1 | 4/10/2015 8:05:16 PM | 18596 |
| Surr: 4-Bromofluorobenzene | 104 | 80-120 | | %REC | 1 | 4/10/2015 8:05:16 PM | 18596 |

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 |
| | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| | O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | Spike Recovery outside accepted recovery limits | | |
| | | | | |

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1504411

Date Reported: 4/15/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: CoP Arizona Jicarilla A No 5A

Collection Date: 4/8/2015 10:25:00 AM

Lab ID: 1504411-004

Matrix: SOIL

Received Date: 4/9/2015 8:09:00 AM

| Analyses | Result | RL | Qual | Units | DF | Date Analyzed | Batch |
|--|--------|----------|------|-------|----|----------------------|--------------|
| EPA METHOD 8015D: DIESEL RANGE ORGANICS | | | | | | | Analyst: JME |
| Diesel Range Organics (DRO) | ND | 9.7 | | mg/Kg | 1 | 4/10/2015 2:24:45 PM | 18604 |
| Surr: DNOP | 96.9 | 63.5-128 | | %REC | 1 | 4/10/2015 2:24:45 PM | 18604 |
| EPA METHOD 8015D: GASOLINE RANGE | | | | | | | Analyst: NSB |
| Gasoline Range Organics (GRO) | ND | 4.9 | | mg/Kg | 1 | 4/10/2015 8:34:02 PM | 18596 |
| Surr: BFB | 92.6 | 80-120 | | %REC | 1 | 4/10/2015 8:34:02 PM | 18596 |
| EPA METHOD 8021B: VOLATILES | | | | | | | Analyst: NSB |
| Benzene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 8:34:02 PM | 18596 |
| Toluene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 8:34:02 PM | 18596 |
| Ethylbenzene | ND | 0.049 | | mg/Kg | 1 | 4/10/2015 8:34:02 PM | 18596 |
| Xylenes, Total | ND | 0.098 | | mg/Kg | 1 | 4/10/2015 8:34:02 PM | 18596 |
| Surr: 4-Bromofluorobenzene | 105 | 80-120 | | %REC | 1 | 4/10/2015 8:34:02 PM | 18596 |

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 |
| | E | Value above quantitation range | H | Holding times for preparation or analysis exceeded |
| | J | Analyte detected below quantitation limits | ND | Not Detected at the Reporting Limit |
| | O | RSD is greater than RSDlimit | P | Sample pH Not In Range |
| | R | RPD outside accepted recovery limits | RL | Reporting Detection Limit |
| | S | Spike Recovery outside accepted recovery limits | | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504411

15-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5A

| | | | | | | | | | | | |
|-----------------------------|----------|-----|----------------|-------------|------|-----------|---|------|--------------|------|--|
| Sample ID | MB-18604 | | SampType: | MBLK | | TestCode: | EPA Method 8015D: Diesel Range Organics | | | | |
| Client ID: | PBS | | Batch ID: | 18604 | | RunNo: | 25410 | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: | 4/10/2015 | | SeqNo: | 753569 | | 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 | 9.6 | | 10.00 | | 95.9 | 63.5 | 128 | | | | |

| | | | | | | | | | | |
|-----------------------------|-----------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | LCS-18604 | | SampType: LCS | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | LCSS | | Batch ID: 18604 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753572 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 53 | 10 | 50.00 | 0 | 106 | 67.8 | 130 | | | |
| Surr: DNOP | 4.5 | | 5.000 | | 89.3 | 63.5 | 128 | | | |

| | | | | | | | | | | |
|-----------------------------|----------------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | 1504411-001AMS | | SampType: MS | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | SC-2 | | Batch ID: 18604 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753590 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 53 | 9.7 | 48.45 | 0 | 110 | 29.2 | 176 | | | |
| Surr: DNOP | 5.1 | | 4.845 | | 106 | 63.5 | 128 | | | |

| | | | | | | | | | | |
|-----------------------------|-----------------|-----|--------------------------|-------------|---|----------|--------------|------|----------|------|
| Sample ID | 1504411-001AMSD | | SampType: MSD | | TestCode: EPA Method 8015D: Diesel Range Organics | | | | | |
| Client ID: | SC-2 | | Batch ID: 18604 | | RunNo: 25410 | | | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: 4/10/2015 | | SeqNo: 753593 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Diesel Range Organics (DRO) | 55 | 9.9 | 49.31 | 0 | 112 | 29.2 | 176 | 4.02 | 23 | |
| Surr: DNOP | 5.3 | | 4.931 | | 107 | 63.5 | 128 | 0 | 0 | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504411

15-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5A

| | | | | | | | | | | |
|-------------------------------|-----------------|-----|----------------|------------------|------|-----------|---|------|---------------------|------|
| Sample ID | MB-18596 | | SampType: | MBLK | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | PBS | | Batch ID: | 18596 | | RunNo: | 25429 | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: | 4/10/2015 | | SeqNo: | 752655 | | 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-18596 | | SampType: | LCS | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | LCSS | | Batch ID: | 18596 | | RunNo: | 25429 | | | |
| Prep Date: | 4/9/2015 | | Analysis Date: | 4/10/2015 | | SeqNo: | 752656 | | Units: mg/Kg | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 103 | 64 | 130 | | | |
| Surr: BFB | 950 | | 1000 | | 94.7 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|------------------|-----|----------------|------------------|------|-----------|---|------|--------------------|------|
| Sample ID | MB-18613 | | SampType: | MBLK | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | PBS | | Batch ID: | 18613 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753290 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 890 | | 1000 | | 88.8 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|------------------|-----|----------------|------------------|------|-----------|---|------|--------------------|------|
| Sample ID | LCS-18613 | | SampType: | LCS | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | LCSS | | Batch ID: | 18613 | | RunNo: | 25449 | | | |
| Prep Date: | 4/10/2015 | | Analysis Date: | 4/11/2015 | | SeqNo: | 753291 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 960 | | 1000 | | 96.3 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|------------------|-----|----------------|------------------|------|-----------|---|------|--------------------|------|
| Sample ID | MB-18665 | | SampType: | MBLK | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | PBS | | Batch ID: | 18665 | | RunNo: | 25496 | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: | 4/14/2015 | | SeqNo: | 755452 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 870 | | 1000 | | 87.2 | 80 | 120 | | | |

| | | | | | | | | | | |
|------------|------------------|-----|----------------|------------------|------|-----------|---|------|--------------------|------|
| Sample ID | LCS-18665 | | SampType: | LCS | | TestCode: | EPA Method 8015D: Gasoline Range | | | |
| Client ID: | LCSS | | Batch ID: | 18665 | | RunNo: | 25496 | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: | 4/14/2015 | | SeqNo: | 755453 | | Units: %REC | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: BFB | 960 | | 1000 | | 96.3 | 80 | 120 | | | |

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504411

15-Apr-15

Client: Rule Engineering LLC

Project: CoP Arizona Jicarilla A No 5A

| | | | | | | | | | | | |
|-------------------------------|-----------|-----|----------------|-------------|------|-----------|----------------------------------|------|--------------|------|--|
| Sample ID | MB-18657 | | SampType: | MBLK | | TestCode: | EPA Method 8015D: Gasoline Range | | | | |
| Client ID: | PBS | | Batch ID: | 18657 | | RunNo: | 25496 | | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: | 4/14/2015 | | SeqNo: | 755490 | | Units: mg/Kg | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Gasoline Range Organics (GRO) | ND | 5.0 | | | | | | | | | |
| Surr: BFB | 900 | | 1000 | | 89.7 | 80 | 120 | | | | |

| | | | | | | | | | | | |
|-------------------------------|-----------|-----|----------------|-------------|------|-----------|----------------------------------|------|--------------|------|--|
| Sample ID | LCS-18657 | | SampType: | LCS | | TestCode: | EPA Method 8015D: Gasoline Range | | | | |
| Client ID: | LCSS | | Batch ID: | 18657 | | RunNo: | 25496 | | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: | 4/14/2015 | | SeqNo: | 755491 | | Units: mg/Kg | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual | |
| Gasoline Range Organics (GRO) | 26 | 5.0 | 25.00 | 0 | 102 | 64 | 130 | | | | |
| Surr: BFB | 970 | | 1000 | | 97.0 | 80 | 120 | | | | |

Qualifiers:

- * Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH Not In Range
- RL Reporting Detection Limit

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504411

15-Apr-15

Client: Rule Engineering LLC
Project: CoP Arizona Jicarilla A No 5A

| | | | | | | | | | | |
|----------------------------|----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-18596 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 18596 | RunNo: | 25429 | | | | | |
| Prep Date: | 4/9/2015 | Analysis Date: | 4/10/2015 | SeqNo: | 752689 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 102 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-18596 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 18596 | RunNo: | 25429 | | | | | |
| Prep Date: | 4/9/2015 | Analysis Date: | 4/10/2015 | SeqNo: | 752690 | Units: | mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 1.2 | 0.050 | 1.000 | 0 | 115 | 76.6 | 128 | | | |
| Toluene | 1.1 | 0.050 | 1.000 | 0 | 106 | 75 | 124 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 113 | 79.5 | 126 | | | |
| Xylenes, Total | 3.4 | 0.10 | 3.000 | 0 | 113 | 78.8 | 124 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 108 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-18613 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 18613 | RunNo: | 25449 | | | | | |
| Prep Date: | 4/10/2015 | Analysis Date: | 4/11/2015 | SeqNo: | 753332 | Units: | %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 100 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | LCS-18613 | SampType: | LCS | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | Batch ID: | 18613 | RunNo: | 25449 | | | | | |
| Prep Date: | 4/10/2015 | Analysis Date: | 4/11/2015 | SeqNo: | 753333 | Units: | %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 107 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|----------------|-----------|-------------|-----------------------------|----------|-----------|------|----------|------|
| Sample ID | MB-18665 | SampType: | MBLK | TestCode: | EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | Batch ID: | 18665 | RunNo: | 25496 | | | | | |
| Prep Date: | 4/13/2015 | Analysis Date: | 4/14/2015 | SeqNo: | 755514 | Units: | %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 0.98 | | 1.000 | | 97.8 | 80 | 120 | | | |

Qualifiers:

- | | |
|---|--|
| * Value exceeds Maximum Contaminant Level. | B Analyte detected in the associated Method Blank |
| E Value above quantitation range | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits | ND Not Detected at the Reporting Limit |
| O RSD is greater than RSDlimit | P Sample pH Not In Range |
| R RPD outside accepted recovery limits | RL Reporting Detection Limit |
| S Spike Recovery outside accepted recovery limits | |

QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1504411

15-Apr-15

Client: Rule Engineering LLC

Project: CoP Arizona Jicarilla A No 5A

| | | | | | | | | | | |
|----------------------------|-----------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID | LCS-18665 | | SampType: LCS | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | | Batch ID: 18665 | | RunNo: 25496 | | | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: 4/14/2015 | | SeqNo: 755515 | | Units: %REC | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 110 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-------|--------------------------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | MB-18657 | | SampType: MBLK | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | PBS | | Batch ID: 18657 | | RunNo: 25496 | | | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: 4/14/2015 | | SeqNo: 755526 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | ND | 0.050 | | | | | | | | |
| Toluene | ND | 0.050 | | | | | | | | |
| Ethylbenzene | ND | 0.050 | | | | | | | | |
| Xylenes, Total | ND | 0.10 | | | | | | | | |
| Surr: 4-Bromofluorobenzene | 1.0 | | 1.000 | | 104 | 80 | 120 | | | |

| | | | | | | | | | | |
|----------------------------|-----------|-------|--------------------------|-------------|---------------------------------------|----------|--------------|------|----------|------|
| Sample ID | LCS-18657 | | SampType: LCS | | TestCode: EPA Method 8021B: Volatiles | | | | | |
| Client ID: | LCSS | | Batch ID: 18657 | | RunNo: 25496 | | | | | |
| Prep Date: | 4/13/2015 | | Analysis Date: 4/14/2015 | | SeqNo: 755527 | | Units: mg/Kg | | | |
| Analyte | Result | PQL | SPK value | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Benzene | 1.1 | 0.050 | 1.000 | 0 | 113 | 76.6 | 128 | | | |
| Toluene | 1.0 | 0.050 | 1.000 | 0 | 103 | 75 | 124 | | | |
| Ethylbenzene | 1.1 | 0.050 | 1.000 | 0 | 110 | 79.5 | 126 | | | |
| Xylenes, Total | 3.3 | 0.10 | 3.000 | 0 | 110 | 78.8 | 124 | | | |
| Surr: 4-Bromofluorobenzene | 1.1 | | 1.000 | | 112 | 80 | 120 | | | |

Qualifiers:

* Value exceeds Maximum Contaminant Level.
E Value above quantitation range
J Analyte detected below quantitation limits
O RSD is greater than RSDlimit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank
H Holding times for preparation or analysis exceeded
ND Not Detected at the Reporting Limit
P Sample pH Not In Range
RL Reporting Detection Limit



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: 1504411

RcptNo: 1

Received by/date: AG 04/09/15

Logged By: Lindsay Mangin 4/9/2015 8:09:00 AM

Completed By: Lindsay Mangin 4/9/2015 10:19:53 AM

Reviewed By: JA 04/09/15

Chain of Custody

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

Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ 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 $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1 | 1.0 | Good | Yes | | | |

