

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 CONS. DIV DIST. 3

JUL 24 2015

Form C-141
Revised August 8, 2011

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

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) 326-9786	
Facility Name: Jicarilla B #8A	Facility Type: Gas Well	
Surface Owner Jicarilla	Mineral Owner Jicarilla	API No. 3003921929

LOCATION OF RELEASE

Unit Letter D	Section 25	Township 26N	Range 04W	Feet from the 810	North/South Line North	Feet from the 1005	East/West Line West	County Rio Arriba
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Latitude **36.462479** Longitude **-107.20855**

NATURE OF RELEASE

Type of Release Historic Hydrocarbon	Volume of Release Unknown	Volume Recovered 50cyds
Source of Release Unknown	Date and Hour of Occurrence Unknown	Date and Hour of Discovery June 2, 2015
Was Immediate Notice Given? <input type="checkbox"/> Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Not Required	If YES, To Whom? N/A	
By Whom? N/A	Date and Hour N/A	
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


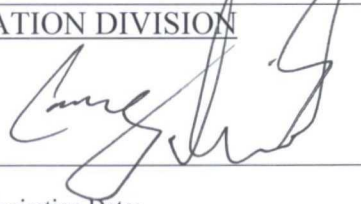
Describe Cause of Problem and Remedial Action Taken.*

Historic contamination was discovered during a facility reset. Third-party environmental contacted for sampling.

Describe Area Affected and Cleanup Action Taken.*

Historical hydrocarbon impacted soil was discovered during facility reset. The excavation was 15' x 6 (to 9)' x 11' in depth and 50 yds of soil was transported to IEI land farm and 50 yds of clean soil from Jicarilla approved location was placed in the excavation site. 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	
Printed Name: Lisa Hunter	Approved by Environmental Specialist: 	
Title: Field Environmental Specialist	Approval Date: 8/12/15	Expiration Date:
E-mail Address: Lisa.Hunter@cop.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: July 21, 2015	Phone: (505) 326-9786	

* Attach Additional Sheets If Necessary

#NCS 1522431099

Jicarilla B No. 8A
Release Report
Unit Letter D, Section 25, Township 26N, Range 04W
N36.46248, W107.20871
Rio Arriba County, New Mexico
July 14, 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 Jicarilla B No. 8A 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

July 14, 2015

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1 Introduction

A historic release was discovered at the ConocoPhillips Jicarilla B No 8A well pad during facility reset activities on June 2, 2015. The ConocoPhillips Jicarilla B No 8A well pad is located in Unit Letter D, Section 25, Township 26N, Range 4W in Rio Arriba County, New Mexico on the Jicarilla Apache Nation. Remedial activities included excavation of hydrocarbon impacted soils and confirmation soil sampling. 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 – Jicarilla B No 8A

Location – Unit Letter D (NW/NW), Section 25, Township 26N, Range 04W

API Number – 30-039-21929

Location Latitude/Longitude – N36.46248 and W107.20871, respectively

Release Latitude/Longitude – N36.46253 and W107.20887, respectively

Land Jurisdiction – Jicarilla Apache Nation

Date Release Discovered – June 2, 2015

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

Source of Release – historic

Release Contents – unknown

Release Volume – unknown

NMOCD Ranking – 10

Date(s) of Rule Engineering, LLC (Rule) Field Work – June 3, 2015

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

Amount of Contaminated Soil Excavated/Disposed – estimated 50 cubic yards

3 Site Ranking

The Jicarilla B No. 8A 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 10 (Table 1). Based on the ranking score of 10, 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 1,000 mg/kg total petroleum hydrocarbons (TPH).

Depth to groundwater at the site was estimated to be greater than 100 feet below ground surface (bgs) based on the elevation differential (228 feet) between the release location and the wash in Wild Horse Canyon (approximately 1,750 feet southwest).

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, an unnamed wash which drains to the wash in Wild Horse Canyon is located approximately 827 feet northwest of the location.

4 Field Activities

On June 2, 2015, the onsite crew encountered historic contamination during facility reset activities. On June 3, 2015, the petroleum impacted materials were excavated from within the release area. Rule personnel provided excavation oversight and conducted field screening activities during remediation activities. On June 3, 2015, based on visual observation and field screening results, the excavation was halted, and Rule personnel collected five confirmation samples (SC-1 through SC-5) from the sidewalls and base of the excavation. Approximately 50 cubic yards of impacted soils were removed from an area of excavation measuring approximately 15 feet x 6 (to 9) feet x 11 feet in depth. Figure 3 provides the locations and results of the soil samples collected during the excavation clearance.

5 Soil Sampling

Rule collected five confirmation soil samples from the sidewalls and base of the excavation. Soil samples SC-1 through SC-5 were collected on June 3, 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 volatile organic compounds (VOCs) and field analyzed for total petroleum hydrocarbons (TPH) per 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.

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 results for soil confirmation samples reported VOC concentrations above the NMOCD action levels of 100 ppm in all samples, except SC-5 with 36.3 ppm. Samples SC-1 through SC-5 had TPH concentrations below the NMOCD action levels of 1,000 mg/kg. Laboratory analytical results for soil confirmation samples SC-1 through SC-5 reported benzene, total BTEX, and TPH (GRO+DRO) concentrations below the applicable NMOCD action levels. Field sampling and laboratory analytical results are

summarized in Table 2 and presented on Figure 3. The analytical laboratory report is included in Appendix A.

6 Conclusions

A historic release was discovered during facility reset activities at the ConocoPhillips Jicarilla B 8A on June 2, 2015. Remedial activities included excavation of approximately 50 cubic yards of hydrocarbon contaminated soils from within the impacted area. The final excavation measured 15 feet x 6 (to 9) feet x 11 feet in depth. Five confirmation soil samples were collected from the sidewalls and base of the final excavation on June 3, 2015.

Field VOCs were reported above the NMOCD action level of 100 ppm in all samples, except SC-5 with 36.3 ppm. Laboratory analytical results for soil confirmation samples (SC-1 through SC-5) reported benzene and total BTEX concentrations below the NMOCD action levels of 10 mg/kg and 50 mg/kg, respectively. All soil confirmation samples reported field and laboratory TPH concentrations below the NMOCD action level of 1,000 mg/kg.

Based on the field screening results, Hobson Sandoval, EPO representative, approved backfilling of the excavation on June 4, 2015. Based on laboratory analytical results, 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 1. NMOCD Site Ranking Determination

Jicarilla B 8A

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	0	Elevation differential between location and wash in Wild Horse Canyon southwest of the location is 228 feet. Location is at a higher elevation.	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	Unnamed wash located 827 feet northwest of location and drains to the wash in Wild Horse Canyon.	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		10		

Table 2. Soil Sampling Results-VOCs, Benzene, Total BTEX, and TPH
Jicarilla B 8A
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	1,000	10	50	1,000	
SC-1	Jun 03, 15	North Wall	0 to 11	588	348	<0.082	0.27	18	140
SC-2	Jun 03, 15	South Wall	0 to 11	3,261	800	<0.11	7.0	190	170
SC-3	Jun 03, 15	East Wall	0 to 11	750	490	<0.083	4.4	98	170
SC-4	Jun 03, 15	West Wall	0 to 11	256	232	<0.040	1.3	42	160
SC-5	Jun 03, 15	Base	11	36.3	46.5	<0.040	<0.20	<4.0	<10

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)

Figures

Legend

★ Jicarilla B 8A Well Head Location

Jicarilla B 8A
N36.46248, W107.20871

Copyright © 2013 National Geographic Society, I-cubed

Rule Engineering, LLC
Solutions to Regulations for Industry

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

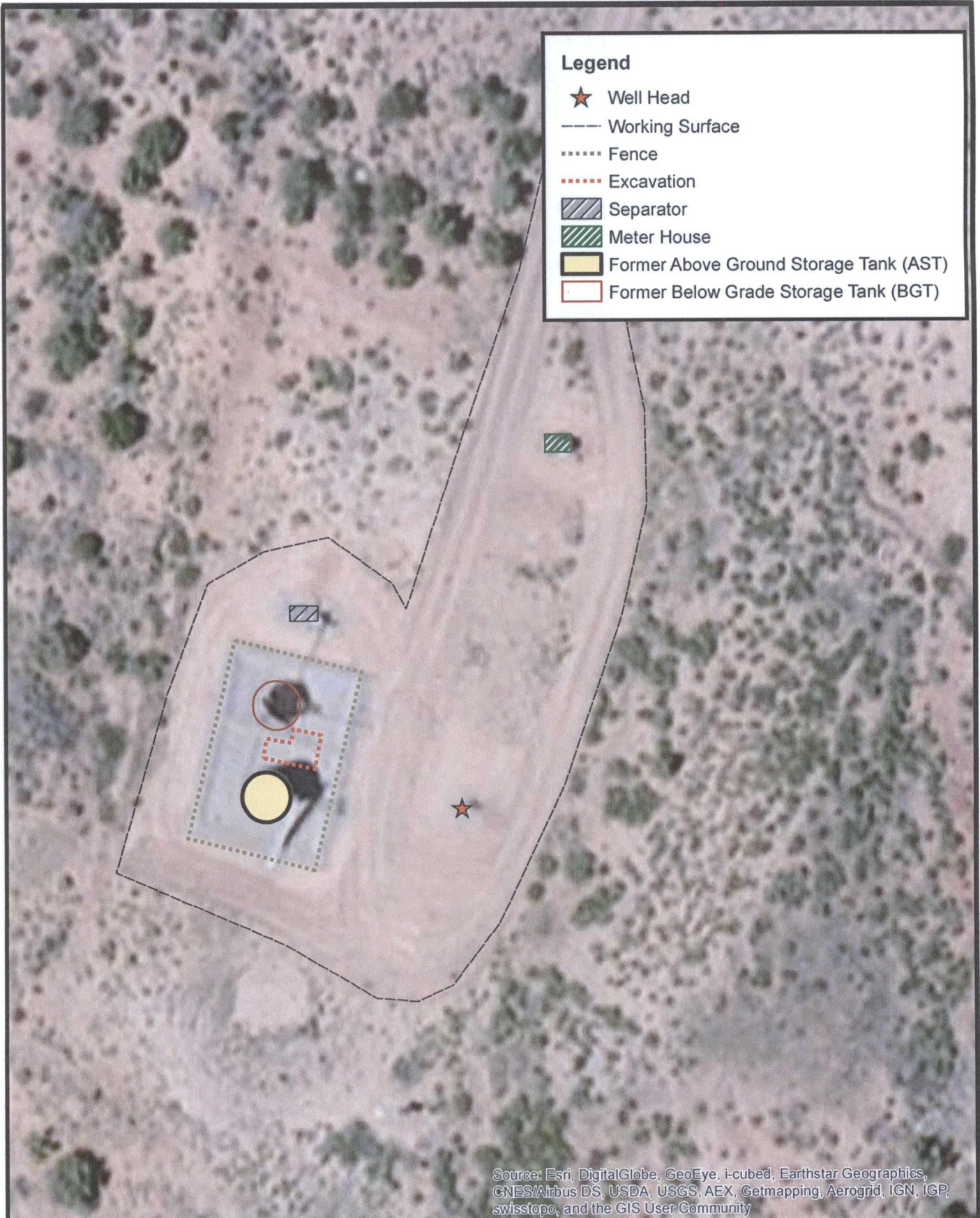


Location
D-25-T26N-R04W
N36.46248, W107.20871
Rio Arriba County, New Mexico

Topographic Map
ConocoPhillips
Jicarilla B 8A
API: 30-039-21929

Date: 7/13/2015 File: 150713 Jicarilla B 8A Topographic Map

Figure: 1

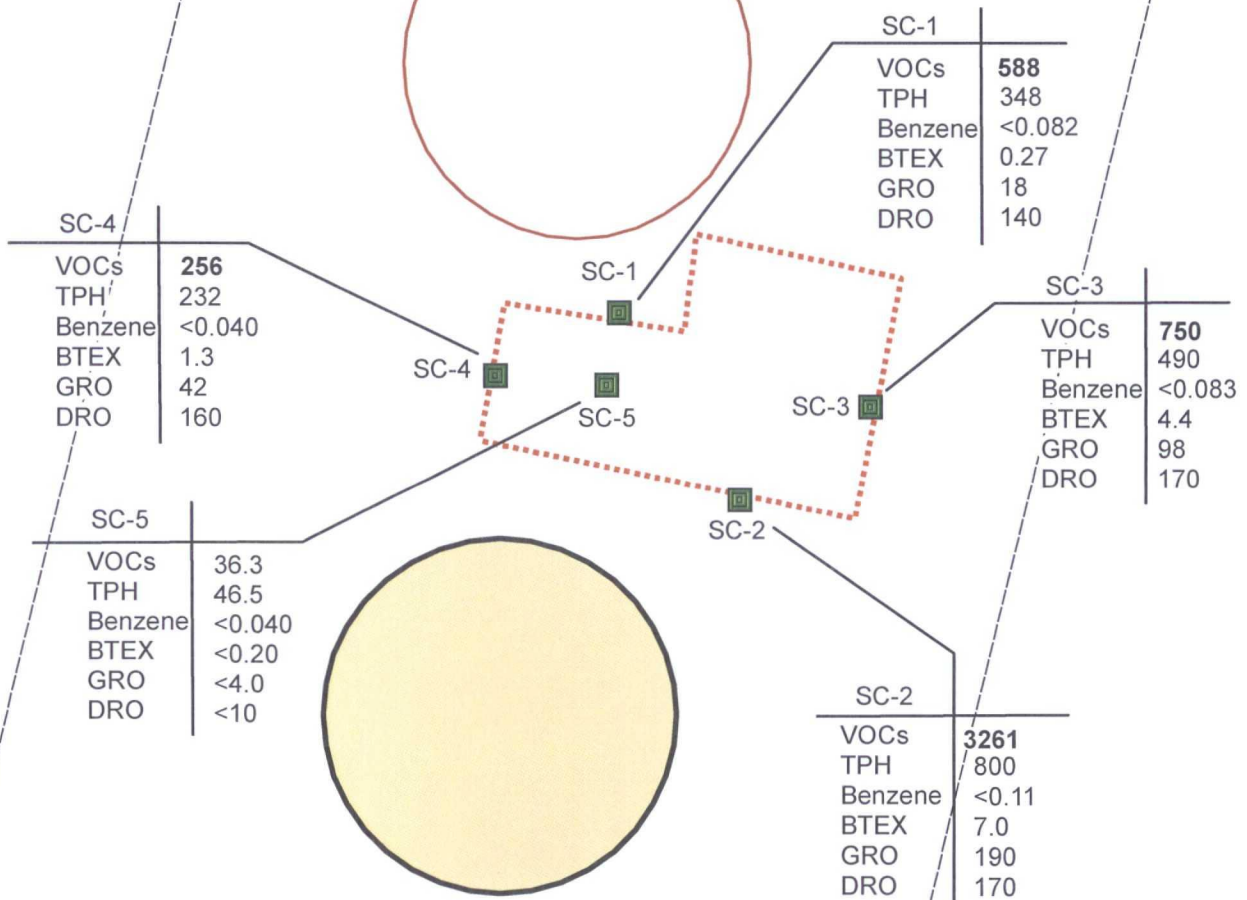


Source: Esri, DigitalGlobe, GeoEye, i-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

-  Soil Sample
-  Fence
-  Excavation
-  Separator
-  Meter House
-  Former Above Ground Storage Tank (AST)
-  Former Below Grade Storage Tank (BGT)

Soil samples collected on June 3, 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.



Appendix A

Analytical Laboratory Report



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

June 05, 2015

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

RE: Jicarilla B 8A

OrderNo.: 1506180

Dear Deborah Watson:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/4/2015 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

Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order 1506180

Date Reported: 6/5/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-1

Project: Jicarilla B 8A

Collection Date: 6/3/2015 2:15:00 PM

Lab ID: 1506180-001

Matrix: MEOH (SOIL)

Received Date: 6/4/2015 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	140	96		mg/Kg	10	6/4/2015 10:13:03 AM	19564
Surr: DNOP	0	57.9-140	S	%REC	10	6/4/2015 10:13:03 AM	19564
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	18	8.2		mg/Kg	2	6/4/2015 10:58:38 AM	R26620
Surr: BFB	152	75.4-113	S	%REC	2	6/4/2015 10:58:38 AM	R26620
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.082		mg/Kg	2	6/4/2015 10:58:38 AM	R26620
Toluene	ND	0.082		mg/Kg	2	6/4/2015 10:58:38 AM	R26620
Ethylbenzene	ND	0.082		mg/Kg	2	6/4/2015 10:58:38 AM	R26620
Xylenes, Total	0.27	0.16		mg/Kg	2	6/4/2015 10:58:38 AM	R26620
Surr: 4-Bromofluorobenzene	101	80-120		%REC	2	6/4/2015 10:58:38 AM	R26620

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 ReportLab Order **1506180**Date Reported: **6/5/2015****Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-2**Project:** Jicarilla B 8A**Collection Date:** 6/3/2015 2:20:00 PM**Lab ID:** 1506180-002**Matrix:** MEOH (SOIL)**Received Date:** 6/4/2015 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	170	95		mg/Kg	10	6/4/2015 10:39:51 AM	19564
Surr: DNOP	0	57.9-140	S	%REC	10	6/4/2015 10:39:51 AM	19564
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	190	11		mg/Kg	2	6/4/2015 11:27:22 AM	R26620
Surr: BFB	484	75.4-113	S	%REC	2	6/4/2015 11:27:22 AM	R26620
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.11		mg/Kg	2	6/4/2015 11:27:22 AM	R26620
Toluene	ND	0.11		mg/Kg	2	6/4/2015 11:27:22 AM	R26620
Ethylbenzene	0.63	0.11		mg/Kg	2	6/4/2015 11:27:22 AM	R26620
Xylenes, Total	6.4	0.21		mg/Kg	2	6/4/2015 11:27:22 AM	R26620
Surr: 4-Bromofluorobenzene	133	80-120	S	%REC	2	6/4/2015 11:27:22 AM	R26620

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: Jicarilla B 8A

Collection Date: 6/3/2015 2:30:00 PM

Lab ID: 1506180-003

Matrix: MEOH (SOIL)

Received Date: 6/4/2015 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	170	99		mg/Kg	10	6/4/2015 11:06:48 AM	19564
Surr: DNOP	0	57.9-140	S	%REC	10	6/4/2015 11:06:48 AM	19564
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	98	8.3		mg/Kg	2	6/4/2015 11:56:16 AM	R26620
Surr: BFB	373	75.4-113	S	%REC	2	6/4/2015 11:56:16 AM	R26620
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.083		mg/Kg	2	6/4/2015 11:56:16 AM	R26620
Toluene	ND	0.083		mg/Kg	2	6/4/2015 11:56:16 AM	R26620
Ethylbenzene	0.38	0.083		mg/Kg	2	6/4/2015 11:56:16 AM	R26620
Xylenes, Total	4.0	0.17		mg/Kg	2	6/4/2015 11:56:16 AM	R26620
Surr: 4-Bromofluorobenzene	128	80-120	S	%REC	2	6/4/2015 11:56:16 AM	R26620

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 1506180

Date Reported: 6/5/2015

Hall Environmental Analysis Laboratory, Inc.

CLIENT: Rule Engineering LLC

Client Sample ID: SC-4

Project: Jicarilla B 8A

Collection Date: 6/3/2015 2:35:00 PM

Lab ID: 1506180-004

Matrix: MEOH (SOIL)

Received Date: 6/4/2015 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	160	93		mg/Kg	10	6/4/2015 11:33:47 AM	19564
Surr: DNOP	0	57.9-140	S	%REC	10	6/4/2015 11:33:47 AM	19564
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	42	4.0		mg/Kg	1	6/4/2015 12:25:02 PM	R26620
Surr: BFB	184	75.4-113	S	%REC	1	6/4/2015 12:25:02 PM	R26620
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.040		mg/Kg	1	6/4/2015 12:25:02 PM	R26620
Toluene	ND	0.040		mg/Kg	1	6/4/2015 12:25:02 PM	R26620
Ethylbenzene	0.11	0.040		mg/Kg	1	6/4/2015 12:25:02 PM	R26620
Xylenes, Total	1.2	0.081		mg/Kg	1	6/4/2015 12:25:02 PM	R26620
Surr: 4-Bromofluorobenzene	114	80-120		%REC	1	6/4/2015 12:25:02 PM	R26620

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 1506180

Date Reported: 6/5/2015

CLIENT: Rule Engineering LLC

Client Sample ID: SC-5

Project: Jicarilla B 8A

Collection Date: 6/3/2015 2:10:00 PM

Lab ID: 1506180-005

Matrix: MEOH (SOIL)

Received Date: 6/4/2015 6:30:00 AM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed	Batch
EPA METHOD 8015D: DIESEL RANGE ORGANICS							Analyst: KJH
Diesel Range Organics (DRO)	ND	10		mg/Kg	1	6/4/2015 12:00:28 PM	19564
Surr: DNOP	92.1	57.9-140		%REC	1	6/4/2015 12:00:28 PM	19564
EPA METHOD 8015D: GASOLINE RANGE							Analyst: NSB
Gasoline Range Organics (GRO)	ND	4.0		mg/Kg	1	6/4/2015 12:53:53 PM	R26620
Surr: BFB	91.6	75.4-113		%REC	1	6/4/2015 12:53:53 PM	R26620
EPA METHOD 8021B: VOLATILES							Analyst: NSB
Benzene	ND	0.040		mg/Kg	1	6/4/2015 12:53:53 PM	R26620
Toluene	ND	0.040		mg/Kg	1	6/4/2015 12:53:53 PM	R26620
Ethylbenzene	ND	0.040		mg/Kg	1	6/4/2015 12:53:53 PM	R26620
Xylenes, Total	ND	0.080		mg/Kg	1	6/4/2015 12:53:53 PM	R26620
Surr: 4-Bromofluorobenzene	95.9	80-120		%REC	1	6/4/2015 12:53:53 PM	R26620

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	Page 5 of 8
	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#: 1506180

05-Jun-15

Client: Rule Engineering LLC

Project: Jicarilla B 8A

Sample ID	MB-19564		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19564		RunNo: 26611					
Prep Date:	6/4/2015		Analysis Date: 6/4/2015		SeqNo: 792326		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	8.2		10.00		82.4	57.9	140			

Sample ID	LCS-19564		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19564		RunNo: 26611					
Prep Date:	6/4/2015		Analysis Date: 6/4/2015		SeqNo: 792327		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	40	10	50.00	0	79.6	67.8	130			
Surr: DNOP	3.8		5.000		75.9	57.9	140			

Sample ID	MB-19508		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19508		RunNo: 26611					
Prep Date:	6/2/2015		Analysis Date: 6/4/2015		SeqNo: 792363		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	9.4		10.00		94.2	57.9	140			

Sample ID	LCS-19508		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19508		RunNo: 26611					
Prep Date:	6/2/2015		Analysis Date: 6/4/2015		SeqNo: 792753		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.5		5.000		110	57.9	140			

Sample ID	MB-19536		SampType: MBLK		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	PBS		Batch ID: 19536		RunNo: 26611					
Prep Date:	6/3/2015		Analysis Date: 6/4/2015		SeqNo: 793140		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	11		10.00		107	57.9	140			

Sample ID	LCS-19536		SampType: LCS		TestCode: EPA Method 8015D: Diesel Range Organics					
Client ID:	LCSS		Batch ID: 19536		RunNo: 26611					
Prep Date:	6/3/2015		Analysis Date: 6/4/2015		SeqNo: 793141		Units: %REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	5.1		5.000		101	57.9	140			

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#: 1506180

05-Jun-15

Client: Rule Engineering LLC

Project: Jicarilla B 8A

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	R26620	RunNo:	26620					
Prep Date:		Analysis Date:	6/4/2015	SeqNo:	792992	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	880		1000		88.3	75.4	113			

Sample ID	2.5UG GRO LCS	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	R26620	RunNo:	26620					
Prep Date:		Analysis Date:	6/4/2015	SeqNo:	792995	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	22	5.0	25.00	0	87.3	64	130			
Surr: BFB	950		1000		94.9	75.4	113			

Sample ID	MB-19516	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	19516	RunNo:	26620					
Prep Date:	6/2/2015	Analysis Date:	6/4/2015	SeqNo:	793052	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	860		1000		86.5	75.4	113			

Sample ID	LCS-19516	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	19516	RunNo:	26620					
Prep Date:	6/2/2015	Analysis Date:	6/4/2015	SeqNo:	793054	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	950		1000		95.0	75.4	113			

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#: 1506180

05-Jun-15

Client: Rule Engineering LLC

Project: Jicarilla B 8A

Sample ID	5ML RB	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	R26620	RunNo:	26620					
Prep Date:		Analysis Date:	6/4/2015	SeqNo:	793076	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	0.93		1.000		93.2	80	120			

Sample ID	100NG BTEX LCS	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	R26620	RunNo:	26620					
Prep Date:		Analysis Date:	6/4/2015	SeqNo:	793077	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	114	76.6	128			
Toluene	1.1	0.050	1.000	0	114	75	124			
Ethylbenzene	1.1	0.050	1.000	0	112	79.5	126			
Xylenes, Total	3.3	0.10	3.000	0	111	78.8	124			
Surr: 4-Bromofluorobenzene	1.0		1.000		101	80	120			

Sample ID	MB-19516	SampType:	MBLK	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	PBS	Batch ID:	19516	RunNo:	26620					
Prep Date:	6/2/2015	Analysis Date:	6/4/2015	SeqNo:	793100	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.90		1.000		90.5	80	120			

Sample ID	LCS-19516	SampType:	LCS	TestCode:	EPA Method 8021B: Volatiles					
Client ID:	LCSS	Batch ID:	19516	RunNo:	26620					
Prep Date:	6/2/2015	Analysis Date:	6/4/2015	SeqNo:	793101	Units:	%REC			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: 4-Bromofluorobenzene	0.99		1.000		98.8	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



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: 1506180

RcptNo: 1

Received by/date:

Logged By: Lindsay Mangin

6/4/2015 6:30:00 AM

Completed By: Lindsay Mangin

6/4/2015 6:48:19 AM

Reviewed By:

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 ☒

of preserved
bottles checked
for pH:

(<2 or >12 unless noted)

12. Does paperwork match bottle labels?

Yes ☒

No ☐

(Note discrepancies on chain of custody)

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?

Yes ☒

No ☐

Checked by:

(If no, notify customer for authorization.)

Special Handling (if applicable)

16. Was client notified of all discrepancies with this order?

Yes ☐

No ☐

NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	2.3	Good	Yes			

Chain-of-Custody Record		Turn-Around Time:	
Client: <u>Risk Engineering</u>		<input type="checkbox"/> Standard <input checked="" type="checkbox"/> Rush <u>same day</u>	
Mailing Address: <u>501 Airport Drive</u>		Project Name: <u>Jicarilla B 8A</u>	
<u>Suite 205 Farmington NM 87401</u>		Project #:	
Phone #: <u>505 860 2112</u>		Project Manager:	
email or Fax#:		<u>D. Watson</u>	
QA/QC Package: <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Level 4 (Full Validation)		Sampler: <u>D Watson</u>	
Accreditation <input type="checkbox"/> NELAP <input type="checkbox"/> Other _____		On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
<input type="checkbox"/> EDD (Type) _____		Sample Temperature: <u>2.3</u>	

[illegible]

Date:	Time:	Relinquished by:	Received by:	Date	Time
6/3/15	1948	Deborah Watom	Christine Waack	6/3/15	1948
Date:	Time:	Relinquished by:	Received by:	Date	Time
6/3/15	2020	Christine Waack	Christine Waack	6/3/15	0630

Sample Temperature: 7.3

	X	X	X	X	X	BTEX + VOC's ^{POLY} Semi-VOC's (8021)
						BTEX + MTBE + TPH (Gas only)
	T	X	X	X	X	TPH 8015B(GROD DRÖDMRO)
						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^{3-} , SO_4^{2-})
						8081 Pesticides / 8082 PCB's
						8260B (VOA)
						8270 (Semi-VOA)
						Air Bubbles (Y or N)

Remarks:	<p>Bill to Concord Phillips</p>
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