

2RP-1486
REMEDIATION REPORT
Ross Gulch Fed Com #2H
Crude Oil Release
Eddy County, New Mexico

LAI Project No. 16-0128-01

January 16, 2017

Prepared for:

EOG Resources, Inc.
5509 Champions Drive
Midland, Texas 797067

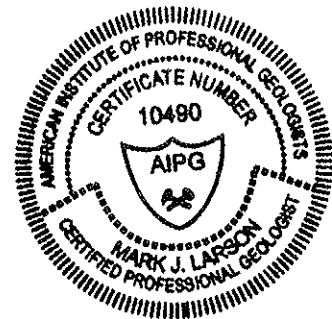
Prepared by:

Larson & Associates, Inc.
507 North Marienfeld Street, Suite 205
Midland, Texas 79701



Mark J. Larson, P.G.

Certified Professional Geologist #10490



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Introduction

This remediation report is prepared on behalf of EOG Resources, Inc. (EOG) for submittal to the New Mexico Oil Conservation Division (OCD) District 2 and U. S. Bureau of Land Management (BLM) for a crude oil release at the Ross Gulch Fed Com Well #2H (Site) in Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 31 East in Eddy County, New Mexico. The geodetic position is North 32.0636885 and West -103.8035110. Figure 1 presents a topographic map. Figure 2 presents an aerial map.

Background

On December 6, 2012, EOG Resources, Inc. (EOG) reported approximately 10 barrels (bbl) of crude oil was released from the flare due to malfunction of a separator dump valve. Wind dispersed the release as a spray over the pasture covering an area about 100 yards (300 feet) by 150 yards (450 feet). No liquid was recovered. The initial C-141 was submitted to the OCD on December 12, 2012. The release was assigned remediation permit number 2RP-1486. The C-141 stated absorbent pads were used to absorb liquid and approximately 1,500 gallons of Microblaze® (4%) was applied to the affected area. The C-141 states the remediation method was approved by the Bureau of Land Management (BLM) and soil samples will be taken to insure proper levels of TPH are reached. No final report was submitted to OCD to confirm remediation was complete. Appendix A presents the initial C-141.

Setting

The setting is as follows:

- Elevation is approximately 3,280 feet above mean sea level (AMSL);
- Topography slopes toward the southwest;
- The nearest surface water feature is an unnamed drainage located about 350 feet west of the Site;
- The nearest fresh water well is located approximately 1,400 feet north in Unit K (NE/4, SW/4), Section 8, Township 26 South and Range 31 East;
- Depth to groundwater is reported at 275.96 feet below ground surface (bgs) according to records from the New Mexico Office of the State Engineer (NMOSE).

Remediation Action Levels

Remediation action levels (RRAL) were calculated for benzene, BTEX and TPH based on the following criteria established by the OCD (*Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993*):

Criteria	Result	Score
Depth-to-Groundwater	>100 Feet	0
Wellhead Protection Area	No	0

Distance to Surface Water	200 – 1,000 Horizontal Feet	10
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The following RRAL apply to the release for ranking score: 10

- Benzene 10 mg/Kg
- BTEX 50 mg/Kg
- TPH 1,000 mg/Kg

Investigation Soil Samples

On August 17 and 31, 2016, personnel from Larson & Associates, Inc. (LAI) collected soil samples at six (6) locations (S-1 through S-6) and a background location (S-BG) about 100 feet southeast of the Site. The samples were collected with a stainless steel hand auger between ground surface and about 6 inches bgs. Another sample was collected on August 31, 2016 near S-2 from 12 to 18 inches or about 1 to 1.5 feet bgs for vertical delineation. The samples were delivered under chain of custody and preservation to Permian Basin Environmental Laboratory (PBEL) and were analyzed for total petroleum hydrocarbons (TPH) including gasoline (GRO), diesel (DRO) and oil (ORO) range organics by EPA SW-846 Method 8015 and chloride by Method 300. The background sample (S-BG) was analyzed for chloride. Table 1 presents the analytical data summary. Figure 3 presents a Site drawing and investigation sample location map. Appendix A presents the laboratory report. Appendix B presents photographs.

Referring to Table 1, TPH was above the RRAL in samples S-1, S-2 and S-3, and ranged from 3,066.6 milligram per kilogram (mg/Kg) in sample S-1 to 11,248 mg/Kg in sample S-2. The laboratory reported TPH below the analytical reporting limit (<29.4 mg/Kg) in sample S-2, 12 to 18 inches. Chloride was below the delineation requirement of 250 mg/Kg.

The laboratory results were submitted to the OCD and BLM in a report titled "Interim Confirmation Sample Report" on September 8, 2016. On November 4, 2016, the OCD District 2 responded that it would not be able to close out the remediation permit until it sees confirmation samples below the RRAL. The OCD requested that benzene, toluene, ethylbenzene and xylenes (BTEX) be added to the parameter list.

Remediation

On October 4, 2016, personnel from SDR Enterprises, (SDR) applied Oil Gator[®] oil absorbent with nutrients (nitrogen, sulphur and phosphorous) to enhance bioremediation by the indigenous soil bacteria. An area measuring approximately 9,246 square feet was treated with Oil Gator[®]. The area was tilled to aid the bioremediation.

LAI personnel collected soil samples at ten (10) locations (SS-1 through SS-10) to verify the remediation. The samples were collected using a stainless steel trowel between ground surface and six (6) inches bgs. PBEL analyzed the samples for BTEX and TPH including GRO, DRO and ORO by EPA SW-846 Method

8021B and 8015, respectively. Table 2 presents the remediation soil sample analytical data summary. Figure 4 presents a Site drawing and remediation sample locations. Appendix A presents the regulatory correspondence. Appendix B presents the laboratory report. Appendix C presents photographs.

Referring to Table 2, benzene, BTEX and TPH were below the RRALs of 10 mg/Kg, 50 mg/Kg and 1000 mg/Kg, respectively, in all samples.

Conclusion

The confirmation sample laboratory results demonstrate the release was remediated below the RRALs. Chloride was demonstrated to be below 250 mg/Kg. EOG requests no further action for 2RP-1486. Appendix D presents the initial and final C-141.

Tables

Table 1
Investigation Soil Sample Analytical Data Summary
EOG Resources, Inc., Ross Gulch 8 Fed Com Well #2H
Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 31 East
Eddy County, New Mexico
2RP-1486

Sample	Depth (Inches)	Collection Date	Status	GRO C6-C12	DRO >C12 - C28	ORO >C28 - C36	TPH	Chloride
OCD RRAL: 1,000								
S-1	0 - 6	8/17/2016	In-Situ	70.6	2,510	486	3,066.6	23.2
S-2	0 - 6	8/17/2016	In-Situ	768	8,930	1,550	11,248	3.17
	12 - 18	8/31/2016	In-Situ	<29.4	<29.4	<29.4	<29.4	13.1
S-3	0 - 6	8/17/2016	In-Situ	146	2,430	514	3,090	<1.01
S-4	0 - 6	8/17/2016	In-Situ	<25.3	36.1	<25.3	36.1	<1.01
S-5	0 - 6	8/17/2016	In-Situ	<25.3	<25.3	<25.3	<25.3	<1.01
S-6	0 - 6	8/17/2016	In-Situ	<25.0	<25.0	<25.0	<25.0	<1.00
Background (S-BG)	6 - 12	8/17/2016	In-Situ	--	--	--	--	<1.01

Notes: analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8015M (TPH) and 300.0 (chloride)
Depth in feet below ground surface (bgs)
mg/kg: milligrams per kilogram equivalent to parts per million (ppm)
*: OCD delineation limit

Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)

Table 2
Remediation Soil Sample Analytical Data Summary
EOG Resources, Inc., Ross Gulch 8 Fed Com Well #2H
Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 31 East
Eddy County, New Mexico
2RP-1486

Sample	Depth (Inches)	Collection Date	Status	Benzene (mg/Kg)	BTEX (mg/Kg)	GRO (mg/Kg)	DRO (mg/Kg)	ORO (mg/Kg)	TPH (mg/Kg)
OCD RRAL:				10	50	1,000			
SS-1	0-6"	12/20/2016	In-situ	--	--	<26.6	<26.6	<26.6	<26.6
		01/17/2017	In-situ	<0.00111	<0.00222	--	--	--	--
SS-2	0-6"	12/20/2016	In-situ	--	--	<26.9	39.1	26.9	66.0
		01/17/2017	In-situ	<0.00116	<0.00233	--	--	--	--
SS-3	0-6"	12/20/2016	In-situ	--	--	<26.6	<26.6	<26.6	<26.6
		01/17/2017	In-situ	<0.00106	<0.00213	--	--	--	--
SS-4	0-6"	12/20/2016	In-situ	--	--	<26.0	<26.0	<26.0	<26.0
		01/17/2017	In-situ	<0.00106	<0.00213	--	--	--	--
SS-5	0-6"	12/20/2016	In-situ	--	--	<25.8	<25.8	<25.8	<25.8
		01/17/2017	In-situ	<0.00106	<0.00213	--	--	--	--
SS-6	0-6"	12/20/2016	In-situ	--	--	<26.3	<26.3	<26.3	<26.3
		01/17/2017	In-situ	<0.00116	<0.00233	--	--	--	--
SS-7	0-6"	12/20/2016	In-situ	--	--	<26.3	<26.3	<26.3	<26.3
		01/17/2017	In-situ	<0.00106	<0.00213	--	--	--	--
SS-8	0-6"	12/20/2016	In-situ	--	--	<26.6	<26.6	<26.6	<26.6

Table 2
Remediation Soil Sample Analytical Data Summary
EOG Resources, Inc., Ross Gulch 8 Fed Com Well #2H
Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 31 East
Eddy County, New Mexico
2RP-1486

		01/17/2017	In-situ	<0.00106	<0.00213	--	--	--	--
SS-9	0-6"	12/30/2016 01/17/2017	In-situ In-situ	-- <0.00105	-- 1.17	<26.6 --	<26.6 --	<26.6 --	<26.6 --
SS-10	0-6"	12/30/2016 01/17/2017	In-situ In-situ	-- <0.00108	-- 0.01012	<26.6 --	<26.6 --	<26.6 --	<26.6 --

Notes: analysis performed by Permian Basin Environmental Lab, Midland, Texas, by EPA SW-846 method 8021B (BTEX) and 8015M (TPH)

Depth in inches below ground surface (bgs)

mg/Kg: milligrams per kilogram equivalent to parts per million (ppm)

*: OCD delineation limit

Bold denotes analyte detected at concentration above the method reporting limit (RL)

Bold and highlighted denotes analyte detected at concentration above the OCD Recommended Remediation Action Level (RRAL)

Figures

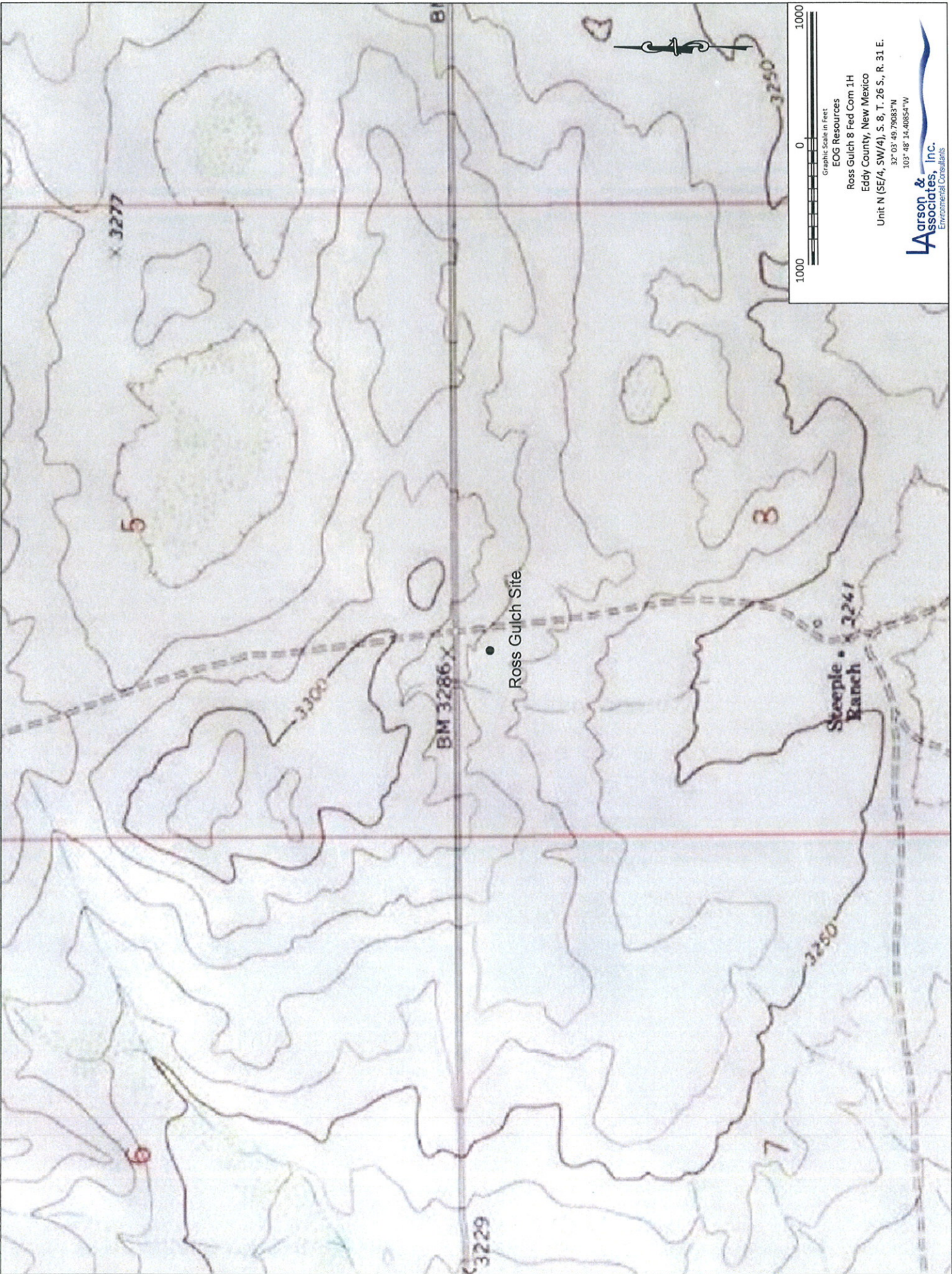
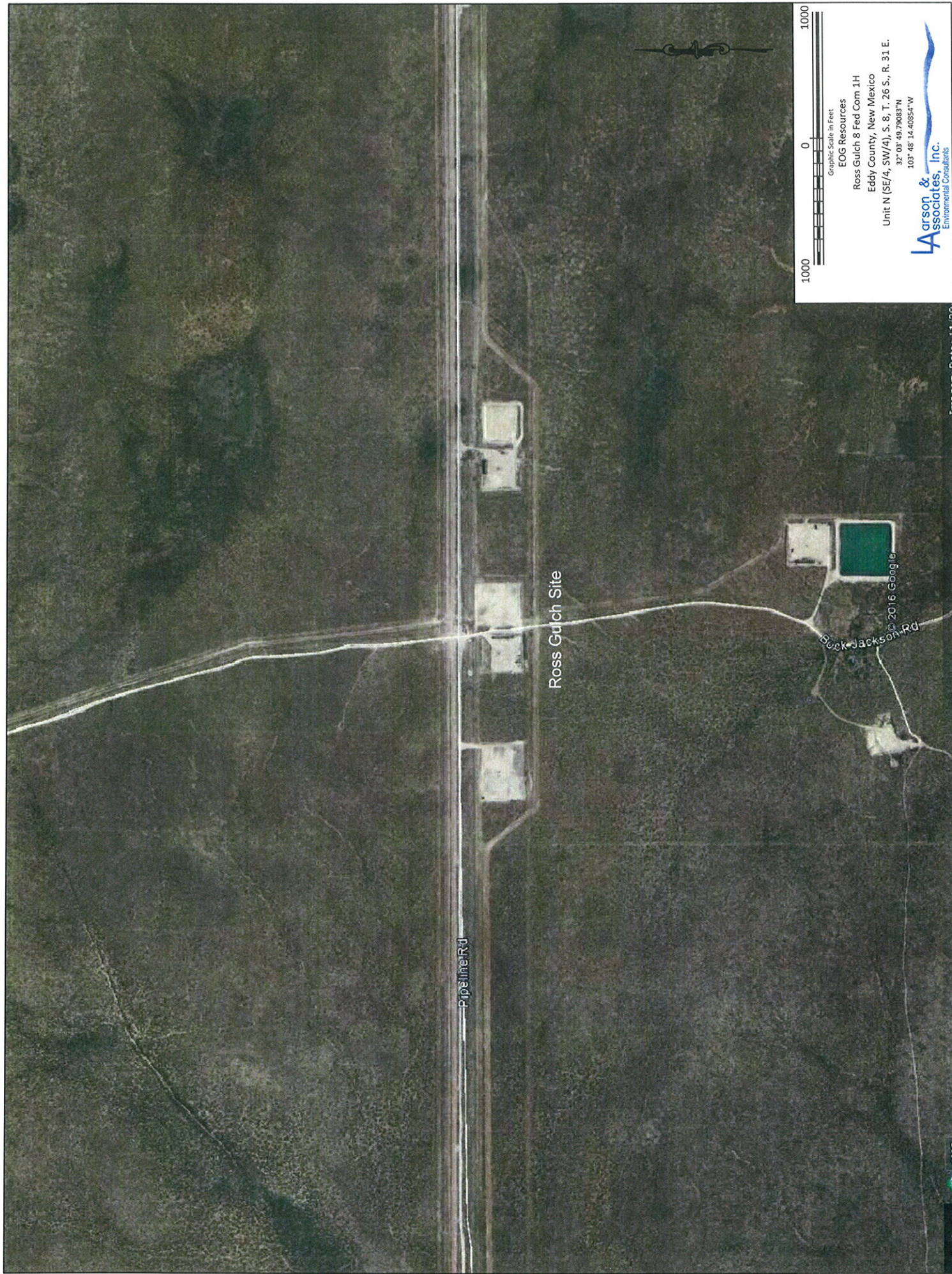


Figure 1 - Topographic Map



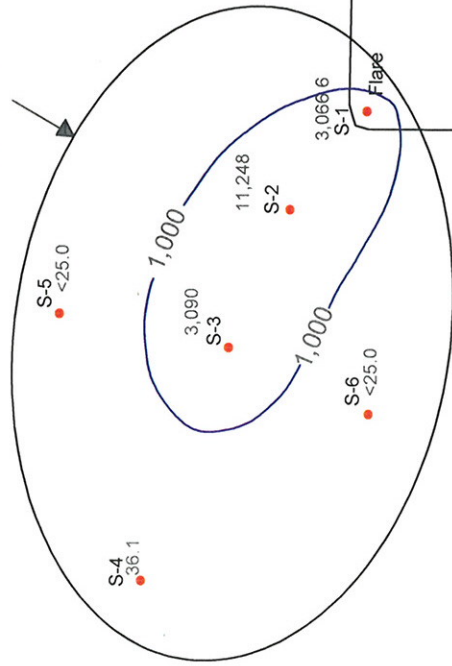
Graphic Scale in Feet
0 1000 1000

EOG Resources
Ross Gulch 8 Fed Com 1H
Eddy County, New Mexico
Unit N (SE/4, SW/4), S. 8, T. 26 S., R. 31 E.
32° 03' 49.79083" N
103° 48' 14.40854" W

Larson & Associates, Inc.
Environmental Consultants

Figure 2 - Aerial Map

Approx. Spray Area



Legend

—1,000— - Approximate limit of RRAL for TPH, mg/Kg, August 17, 2016

S-1 ● - Soil Sample Location, 0-6", and TPH Concentration, mg/Kg, August 17, 2016

S-BG ● - Background Sample Location (Chloride)



EOG Resources

Ross Gulch 8 Fed Com 1H
Eddy County, New Mexico

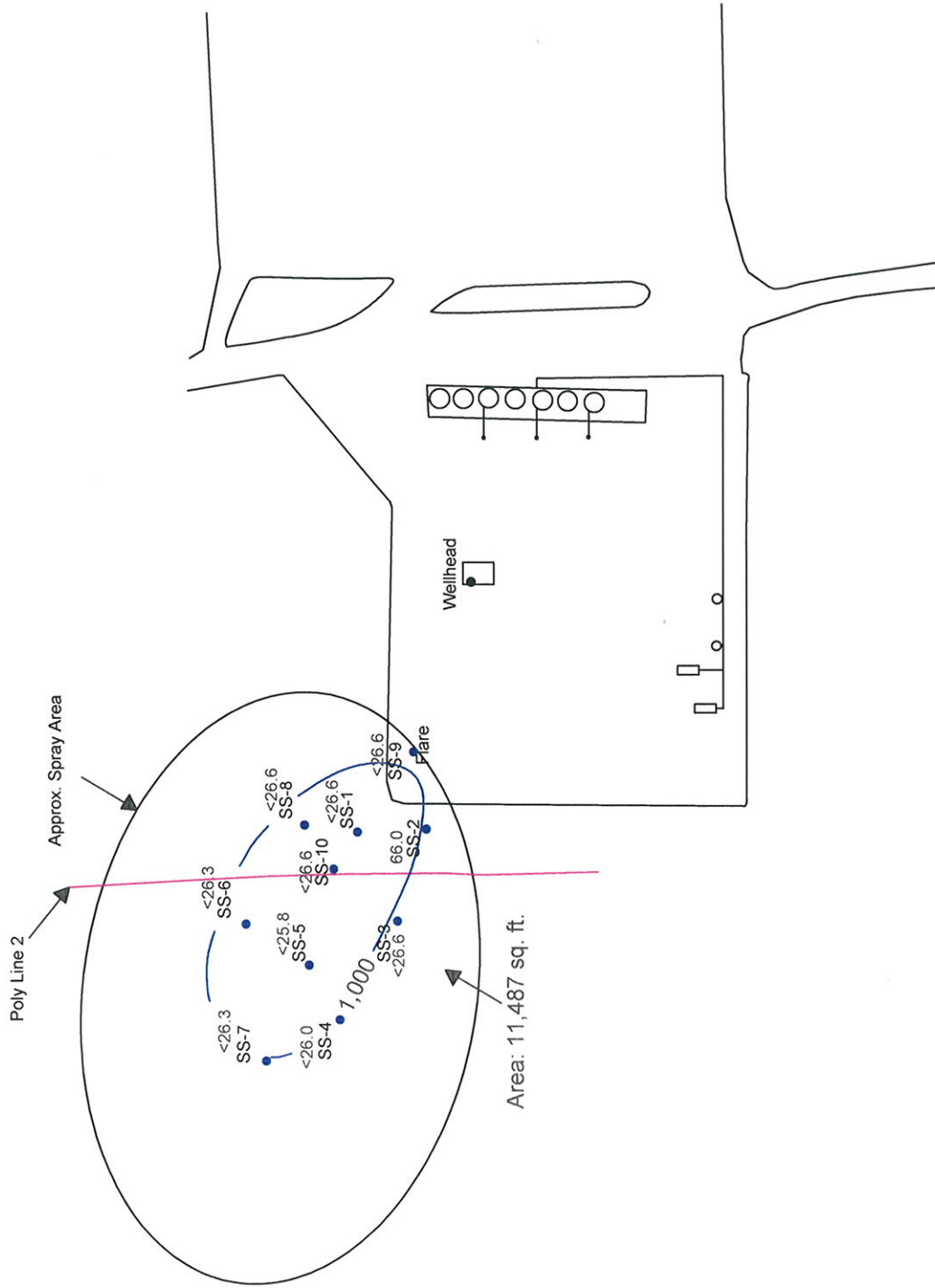
Unit N (SE/4, SW/4), S. 8, T. 26 S., R. 31 E.

32° 03' 49.790831"N

103° 48' 14.40854"W

Larson & Associates, Inc.
Environmental Consultants

Figure 3 - Site Map Showing Sample Locations and TPH Concentration in Soil, August 17, 2016



Legend

—1,000— - Approximate limit of RRAL for TPH, mg/Kg, August 17, 2016

SS-1 • - Remediation Sample Location, December 20, 2016 and January 17, 2017 and TPH Concentration in Soil, mg/Kg



EOG Resources
 Ross Gulch 8 Fed Com 1H
 Eddy County, New Mexico
 Unit N (SE/4, SW/4), S. 8, T. 26 S., R. 31 E.
 32° 03' 49.79083"N
 103° 48' 14.40854"W
Larson & Associates, Inc.
 Environmental Consultants

Figure 4 - Site Map Showing Remediation Sample Locations

Appendix A

Regulatory Correspondence

Mark Larson

From: Patterson, Heather, EMNRD [Heather.Patterson@state.nm.us]
Sent: Friday, November 04, 2016 12:16 PM
To: Mark Larson
Cc: Billings, Bradford, EMNRD; Bratcher, Mike, EMNRD; stucker@blm.gov; Zane Kurtz; Weaver, Crystal, EMNRD
Subject: RE: 2RP-1486 - Final Remediation Report, Ross Gulch 8 Fed Com Well #2H, EOG Resources, Inc., October 26, 2016

RE: EOG Resources * Ross Gulch 8 Fed Com 1H * 30-015-39171 * 2RP-1486

Mark,

The OCD will not be able to close out this project until we see confirmation samples below RRAL's. In addition, please add BTEX to your confirmation samples.

OCD approval does not relieve the operator of liability should their operations fail to adequately investigate and remediate contamination that may pose a threat to ground water, surface water, human health or the environment. In addition, OCD approval does not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If you have any questions or concerns, and for notification, please contact me.

Thank you,

Heather Patterson
Environmental Specialist
NMOCD District II
Office (575)748-1283 ext.101
Cell (575)703-0228

From: Mark Larson [<mailto:Mark@laenvironmental.com>]
Sent: Wednesday, October 26, 2016 3:58 PM
To: Billings, Bradford, EMNRD; Bratcher, Mike, EMNRD; Patterson, Heather, EMNRD; Tucker, Shelly; Zane Kurtz
Subject: Re: 2RP-1486 - Final Remediation Report, Ross Gulch 8 Fed Com Well #2H, EOG Resources, Inc., October 26, 2016

All,

Larson & Associates, Inc. (LAI) submits the attached report to the New Mexico Oil Conservation Division (OCD) District 2 and U.S. Bureau of Land Management (BLM) on behalf of EOG Resources, Inc. (EOG). The report presents the final remediation of a crude oil spill at the Ross Gulch 8 Fed Com Well #2H located in Unit N (SE/4, SW/4), Section 8, Township 26 South, Range 31 East, in Eddy County, New Mexico. Please contact Zane Kurtz with EOG at (432) 686-3667 or me if you have questions.

Respectfully,

Mark J. Larson, P.G.
President/Sr. Project Manager
507 N. Marienfeld St., Suite 205
Midland, Texas 79701
Office – 432-687-0901
Cell – 432- 556-8656
Fax – 432-687-0456
mark@laenvironmental.com



"Serving the Permian Basin Since 2000"

Appendix B
Laboratory Reports

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**



Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Location: New Mexico
Lab Order Number: 6L21005



NELAP/TCEQ # T104704156-16-6

Report Date: 12/27/16

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1	6L21005-01	Soil	12/20/16 12:38	12-21-2016 15:23
SS-2	6L21005-02	Soil	12/20/16 12:42	12-21-2016 15:23
SS-3	6L21005-03	Soil	12/20/16 12:45	12-21-2016 15:23
SS-4	6L21005-04	Soil	12/20/16 12:49	12-21-2016 15:23
SS-5	6L21005-05	Soil	12/20/16 12:52	12-21-2016 15:23
SS-6	6L21005-06	Soil	12/20/16 12:56	12-21-2016 15:23
SS-7	6L21005-07	Soil	12/20/16 13:00	12-21-2016 15:23
SS-8	6L21005-08	Soil	12/20/16 13:03	12-21-2016 15:23

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-1
6L21005-01 (Soil)

Analytic	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		73.2 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		92.4 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-2

6L21005-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	7.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.9	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	39.1	26.9	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	26.9	26.9	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		96.4 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		122 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	66.0	26.9	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-3

6L21005-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		95.7 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		118 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-4
6L21005-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	4.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.0	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	ND	26.0	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	ND	26.0	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		92.6 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		119 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.0	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-5
6L21005-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	3.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	25.8	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	ND	25.8	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	ND	25.8	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		90.0 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		115 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	25.8	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-6
6L21005-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	5.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C12-C28	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
>C28-C35	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: 1-Chlorooctane		93.5 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Surrogate: o-Terphenyl		122 %	70-130		P6L2302	12/22/16	12/22/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	12/22/16	12/22/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-7

6L21005-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	5.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
>C12-C28	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
>C28-C35	ND	26.3	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
Surrogate: 1-Chlorooctane		73.2 %	70-130		P6L2302	12/22/16	12/23/16	TPH 8015M
Surrogate: o-Terphenyl		94.0 %	70-130		P6L2302	12/22/16	12/23/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.3	mg/kg dry	1	[CALC]	12/22/16	12/23/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-8
6L21005-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P6L2203	12/22/16	12/22/16	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
>C12-C28	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P6L2302	12/22/16	12/23/16	TPH 8015M
Surrogate: 1-Chlorooctane		81.7 %	70-130		P6L2302	12/22/16	12/23/16	TPH 8015M
Surrogate: o-Terphenyl		104 %	70-130		P6L2302	12/22/16	12/23/16	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	12/22/16	12/23/16	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P6L2203 - % Solids

Blank (P6L2203-BLK1)

Prepared & Analyzed: 12/22/16

% Moisture	ND	0.1	%
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Duplicate (P6L2203-DUP1)

Source: 6L21008-14

Prepared & Analyzed: 12/22/16

% Moisture	16.0	0.1	%	16.0	0.00	20
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P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch P6L2302 - TX 1005										
Blank (P6L2302-BLK1)				Prepared & Analyzed: 12/22/16						
C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	138		"	200		69.2	70-130			S-GC
Surrogate: o-Terphenyl	82.9		"	100		82.9	70-130			
LCS (P6L2302-BS1)				Prepared & Analyzed: 12/22/16						
C6-C12	756	25.0	mg/kg wet	1000		75.6	75-125			
>C12-C28	783	25.0	"	1000		78.3	75-125			
Surrogate: 1-Chlorooctane	132		"	200		65.8	70-130			S-GC
Surrogate: o-Terphenyl	75.1		"	100		75.1	70-130			
LCS Dup (P6L2302-BSD1)				Prepared & Analyzed: 12/22/16						
C6-C12	758	25.0	mg/kg wet	1000		75.8	75-125	0.287	20	
>C12-C28	787	25.0	"	1000		78.7	75-125	0.521	20	
Surrogate: 1-Chlorooctane	132		"	200		66.2	70-130			S-GC
Surrogate: o-Terphenyl	75.0		"	100		75.0	70-130			
Matrix Spike (P6L2302-MS1)				Source: 6L21006-01	Prepared: 12/22/16 Analyzed: 12/23/16					
C6-C12	1090	30.1	mg/kg dry	1200	75.5	84.6	75-125			
>C12-C28	1490	30.1	"	1200	201	107	75-125			
Surrogate: 1-Chlorooctane	145		"	120		120	70-130			
Surrogate: o-Terphenyl	77.3		"	60.2		128	70-130			
Matrix Spike Dup (P6L2302-MSD1)				Source: 6L21006-01	Prepared: 12/22/16 Analyzed: 12/23/16					
C6-C12	1090	30.1	mg/kg dry	1200	75.5	84.3	75-125	0.378	20	
>C12-C28	1360	30.1	"	1200	201	96.2	75-125	11.0	20	
Surrogate: 1-Chlorooctane	133		"	120		111	70-130			
Surrogate: o-Terphenyl	75.2		"	60.2		125	70-130			

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: EOG Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
DET Analyte DETECTED
ND Analyte NOT DETECTED at or above the reporting limit
NR Not Reported
dry Sample results reported on a dry weight basis
RPD Relative Percent Difference
LCS Laboratory Control Spike
MS Matrix Spike
Dup Duplicate

Report Approved By:



Date:

12/27/2016

Brent Barron, Laboratory Director/Technical Director

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**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**

PBELAB

Analytical Report

Prepared for:

Michael Gant
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Ross Gulch
Project Number: 16-0128-01
Location:
Lab Order Number: 6L30012



NELAP/TCEQ # T104704156-16-6

Report Date: 01/17/17

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-10	6L30012-01	Soil	12/30/16 10:30	12-30-2016 14:55
SS-9	6L30012-02	Soil	12/30/16 10:40	12-30-2016 14:55

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

SS-10
6L30012-01 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A0402	01/04/17	01/04/17	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M
>C12-C28	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M
>C28-C35	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M
Surrogate: 1-Chlorooctane		124 %	70-130		P7A0407	01/03/17	01/04/17	TPH 8015M
Surrogate: o-Terphenyl		128 %	70-130		P7A0407	01/03/17	01/04/17	TPH 8015M
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	01/03/17	01/04/17	calc

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

SS-9
6L30012-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A0402	01/04/17	01/04/17	% calculation
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Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M

C6-C12	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M	
>C12-C28	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M	
>C28-C35	ND	26.6	mg/kg dry	1	P7A0407	01/03/17	01/04/17	TPH 8015M	
Surrogate: 1-Chlorooctane		126 %	70-130		P7A0407	01/03/17	01/04/17	TPH 8015M	
Surrogate: o-Terphenyl		135 %	70-130		P7A0407	01/03/17	01/04/17	TPH 8015M	S-GC
Total Petroleum Hydrocarbon C6-C35	ND	26.6	mg/kg dry	1	[CALC]	01/03/17	01/04/17	calc	

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P7A0402 - * DEFAULT PREP *****

Blank (P7A0402-BLK1)

Prepared & Analyzed: 01/04/17

% Moisture	ND	0.1	%
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Duplicate (P7A0402-DUP1)

Source: 7A03002-03

Prepared & Analyzed: 01/04/17

% Moisture	8.0	0.1	%	9.0	11.8	20
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

Total Petroleum Hydrocarbons C6-C35 by EPA Method 8015M - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC %REC	Limit	RPD	RPD Limit	Notes
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Batch P7A0407 - TX 1005

Blank (P7A0407-BLK1)

Prepared: 01/03/17 Analyzed: 01/04/17

C6-C12	ND	25.0	mg/kg wet							
>C12-C28	ND	25.0	"							
>C28-C35	ND	25.0	"							
Surrogate: 1-Chlorooctane	111		"	100		111	70-130			
Surrogate: o-Terphenyl	52.1		"	50.0		104	70-130			

LCS (P7A0407-BS1)

Prepared: 01/03/17 Analyzed: 01/04/17

C6-C12	1250	25.0	mg/kg wet	1000		125	75-125			
>C12-C28	1140	25.0	"	1000		114	75-125			
Surrogate: 1-Chlorooctane	90.7		"	100		90.7	70-130			
Surrogate: o-Terphenyl	38.8		"	50.0		77.7	70-130			

LCS Dup (P7A0407-BSD1)

Prepared: 01/03/17 Analyzed: 01/04/17

C6-C12	1250	25.0	mg/kg wet	1000		125	75-125	0.0862	20	
>C12-C28	1170	25.0	"	1000		117	75-125	2.71	20	
Surrogate: 1-Chlorooctane	99.6		"	100		99.6	70-130			
Surrogate: o-Terphenyl	46.2		"	50.0		92.4	70-130			

Matrix Spike (P7A0407-MS1)

Source: 6L30012-02

Prepared: 01/03/17 Analyzed: 01/04/17

C6-C12	1510	26.6	mg/kg dry	1490	ND	102	75-125			
>C12-C28	1500	26.6	"	1490	ND	101	75-125			
Surrogate: 1-Chlorooctane	170		"	160		106	70-130			
Surrogate: o-Terphenyl	75.8		"	79.8		95.0	70-130			

Matrix Spike Dup (P7A0407-MSD1)

Source: 6L30012-02

Prepared: 01/03/17 Analyzed: 01/04/17

C6-C12	1540	26.6	mg/kg dry	1490	ND	103	75-125	1.54	20	
>C12-C28	1500	26.6	"	1490	ND	100	75-125	0.106	20	
Surrogate: 1-Chlorooctane	170		"	160		107	70-130			
Surrogate: o-Terphenyl	75.9		"	79.8		95.1	70-130			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Michael Gant

Fax: (432) 687-0456

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date:

1/17/2017

Brent Barron, Laboratory Director/Technical Director

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If you have received this material in error, please notify us immediately at 432-686-7235.

CHAIN-OF-CUSTODY

Data Reported to: Mark Larson

DATE: 12/30/16 PAGE 1 OF 1
PO #: _____ LAB WORK ORDER # 16030012
PROJECT LOCATION OR NAME: Ross Gulch
LAI PROJECT # 16-0128-01 COLLECTOR Tara Moninger

Page 8 of 8

Page 8 of 8

TRRP report? ☐ Yes ☒ No TIME ZONE: _____ Time zone/State: _____		P=PAINT SL=SLUDGE OT=OTHER	
Field Sample I.D. NM		Lab # _____ Date _____ Time _____	
Matrx _____		# of Containers _____	
HCl _____ HNO ₃ _____ H ₂ SO ₄ ☐ NaOH ☐		ICE _____ UNPRESERVED _____	
ANALYSES BTX ☐ MTBE ☐ TRPH 418.1 ☐ TPH 1005 ☐ TPH 1008 ☐ GASOLINE MOD 8015 ☒ CROWN DIESEL - MOD 8015 ☒ VOC 8260 ☐ SVOC 8270 ☐ PAH 8270 ☐ HOLD PAH ☐ 8081 PESTICIDES ☐ 8161 HERBICIDES ☐ 8082 PCBs ☐ TCLP - METALS (RCRA) ☐ TCLP - VOC ☐ TOTAL METALS (RCRA) ☐ SEMI-VOC ☐ LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐ RCL ☐ TOX ☐ FLASHPOINT ☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐ PH ☐ HEXAVALENT CHROMIUM ☐ EXPLOSIVES ☐ PEROXIDE ☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐			
RELINQUISHED BY: (Signature) _____ DATE/TIME 12-30-16 1455 RECEIVED BY: (Signature) _____ DATE/TIME 12-30-16 1455		RELINQUISHED BY: (Signature) _____ DATE/TIME _____ RECEIVED BY: (Signature) _____ DATE/TIME _____	
RELINQUISHED BY: (Signature) _____ DATE/TIME 12-30-16 1455 RECEIVED BY: (Signature) _____ DATE/TIME _____		RELINQUISHED BY: (Signature) _____ DATE/TIME _____ RECEIVED BY: (Signature) _____ DATE/TIME _____	
TURN AROUND TIME NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐			
LABORATORY USE ONLY: RECEIVING TEMP. _____ THERM # _____ CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED CARRIER BILL # _____ HAND DELIVERED ☐			
FIELD NOTES 55-10 55-9 11/21/17 BS			

**PERMIAN BASIN
ENVIRONMENTAL LAB, LP
1400 Rankin Hwy
Midland, TX 79701**



Analytical Report

Prepared for:

Mark Larson
Larson & Associates, Inc.
P.O. Box 50685
Midland, TX 79710

Project: Ross Gulch
Project Number: 16-0128-01
Location: New Mexico
Lab Order Number: 7A17009



NELAP/TCEQ # T104704156-13-3

Report Date: 01/18/17

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
SS-1	7A17009-01	Soil	01/17/17 10:50	01-17-2017 16:15
SS-2	7A17009-02	Soil	01/17/17 10:55	01-17-2017 16:15
SS-3	7A17009-03	Soil	01/17/17 10:59	01-17-2017 16:15
SS-4	7A17009-04	Soil	01/17/17 11:05	01-17-2017 16:15
SS-5	7A17009-05	Soil	01/17/17 11:11	01-17-2017 16:15
SS-6	7A17009-06	Soil	01/17/17 11:17	01-17-2017 16:15
SS-7	7A17009-07	Soil	01/17/17 11:21	01-17-2017 16:15
SS-8	7A17009-08	Soil	01/17/17 11:27	01-17-2017 16:15
SS-9	7A17009-09	Soil	01/17/17 11:38	01-17-2017 16:15
SS-10	7A17009-10	Soil	01/17/17 11:34	01-17-2017 16:15

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-1
7A17009-01 (Soil)

Analyte	Result	Reporting		Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
		Limit								

Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00111	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B
Toluene	ND	0.00222	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B
Ethylbenzene	ND	0.00111	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B
Xylene (p/m)	ND	0.00222	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B
Xylene (o)	ND	0.00111	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B
Surrogate: 4-Bromofluorobenzene		95.7 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B
Surrogate: 1,4-Difluorobenzene		93.3 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B

General Chemistry Parameters by EPA / Standard Methods

% Moisture	10.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-2
7A17009-02 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00233	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00233	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		93.1 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	14.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-3

7A17009-03 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		90.5 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		89.7 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-4
7A17009-04 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		88.1 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		87.6 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-5
7A17009-05 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.9 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		93.5 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-6

7A17009-06 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00233	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00233	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00116	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.6 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		89.1 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	14.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-7
7A17009-07 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.9 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		90.4 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-8
7A17009-08 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	ND	0.00213	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	ND	0.00106	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		92.5 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		88.6 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	6.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Permian Basin Environmental Lab, L.P.

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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-9
7A17009-09 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00105	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	0.103	0.00211	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	0.128	0.00105	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	0.647	0.00211	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	0.292	0.00105	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		60.6 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	S-GC
Surrogate: 1,4-Difluorobenzene		90.7 %	75-125		P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	5.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Larson & Associates, Inc.
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Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

SS-10
7A17009-10 (Soil)

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
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Permian Basin Environmental Lab, L.P.

Organics by GC

Benzene	ND	0.00108	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Toluene	ND	0.00215	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Ethylbenzene	0.00159	0.00108	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (p/m)	0.00585	0.00215	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Xylene (o)	0.00268	0.00108	mg/kg dry	1	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 1,4-Difluorobenzene		94.0 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	
Surrogate: 4-Bromofluorobenzene		120 %		75-125	P7A1811	01/18/17	01/18/17	EPA 8021B	

General Chemistry Parameters by EPA / Standard Methods

% Moisture	7.0	0.1	%	1	P7A1805	01/18/17	01/18/17	% calculation	
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Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P7A1811 - General Preparation (GC)

Blank (P7A1811-BLK1)

Prepared & Analyzed: 01/18/17

Benzene	ND	0.00100	mg/kg wet							
Toluene	ND	0.00200	"							
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00200	"							
Xylene (o)	ND	0.00100	"							
Surrogate: 1,4-Difluorobenzene	0.0559		"	0.0600		93.1	75-125			
Surrogate: 4-Bromofluorobenzene	0.0670		"	0.0600		112	75-125			

LCS (P7A1811-BS1)

Prepared & Analyzed: 01/18/17

Benzene	0.0983	0.00100	mg/kg wet	0.100		98.3	70-130			
Toluene	0.105	0.00200	"	0.100		105	70-130			
Ethylbenzene	0.119	0.00100	"	0.100		119	70-130			
Xylene (p/m)	0.217	0.00200	"	0.200		108	70-130			
Xylene (o)	0.105	0.00100	"	0.100		105	70-130			
Surrogate: 1,4-Difluorobenzene	0.0582		"	0.0600		97.0	75-125			
Surrogate: 4-Bromofluorobenzene	0.0736		"	0.0600		123	75-125			

LCS Dup (P7A1811-BSD1)

Prepared & Analyzed: 01/18/17

Benzene	0.0986	0.00100	mg/kg wet	0.100		98.6	70-130	0.274	20	
Toluene	0.105	0.00200	"	0.100		105	70-130	0.0570	20	
Ethylbenzene	0.124	0.00100	"	0.100		124	70-130	4.15	20	
Xylene (p/m)	0.217	0.00200	"	0.200		108	70-130	0.0553	20	
Xylene (o)	0.104	0.00100	"	0.100		104	70-130	1.38	20	
Surrogate: 1,4-Difluorobenzene	0.0610		"	0.0600		102	75-125			
Surrogate: 4-Bromofluorobenzene	0.0739		"	0.0600		123	75-125			

Matrix Spike (P7A1811-MS1)

Source: 7A17009-01

Prepared & Analyzed: 01/18/17

Benzene	0.0708	0.00111	mg/kg dry	0.111	ND	63.8	80-120			QM-05
Toluene	0.0635	0.00222	"	0.111	ND	57.1	80-120			QM-05
Ethylbenzene	0.0624	0.00111	"	0.111	0.000644	55.5	80-120			QM-05
Xylene (p/m)	0.101	0.00222	"	0.222	ND	45.7	80-120			QM-05
Xylene (o)	0.0519	0.00111	"	0.111	ND	46.7	80-120			QM-05
Surrogate: 4-Bromofluorobenzene	0.0883		"	0.0667		132	75-125			S-GC
Surrogate: 1,4-Difluorobenzene	0.0647		"	0.0667		97.0	75-125			

Permian Basin Environmental Lab, L.P.

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Permian Basin Environmental Lab.

1400 Rankin HWY Midland, TX 79701 432-686-7235

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Organics by GC - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P7A1811 - General Preparation (GC)

Matrix Spike Dup (P7A1811-MSD1)	Source: 7A17009-01			Prepared & Analyzed: 01/18/17						
Benzene	0.0679	0.00111	mg/kg dry	0.111	ND	61.1	80-120	4.24	20	QM-05
Toluene	0.0619	0.00222	"	0.111	ND	55.7	80-120	2.55	20	QM-05
Ethylbenzene	0.0685	0.00111	"	0.111	0.000644	61.1	80-120	9.47	20	QM-05
Xylene (p/m)	0.115	0.00222	"	0.222	ND	51.7	80-120	12.4	20	QM-05
Xylene (o)	0.0585	0.00111	"	0.111	ND	52.6	80-120	11.8	20	QM-05
Surrogate: 4-Bromofluorobenzene	0.0773		"	0.0667		116	75-125			
Surrogate: 1,4-Difluorobenzene	0.0637		"	0.0667		95.6	75-125			

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

General Chemistry Parameters by EPA / Standard Methods - Quality Control
Permian Basin Environmental Lab, L.P.

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch P7A1805 - * DEFAULT PREP *****

Blank (P7A1805-BLK1)

Prepared & Analyzed: 01/18/17

% Moisture ND 0.1 %

Duplicate (P7A1805-DUP1)

Source: 7A17005-13

Prepared & Analyzed: 01/18/17

% Moisture 13.0 0.1 % 13.0 0.00 20

Duplicate (P7A1805-DUP2)

Source: 7A17009-10

Prepared & Analyzed: 01/18/17

% Moisture 7.0 0.1 % 7.0 0.00 20

Duplicate (P7A1805-DUP3)

Source: 7A18006-03

Prepared & Analyzed: 01/18/17

% Moisture 15.0 0.1 % 15.0 0.00 20

Duplicate (P7A1805-DUP4)

Source: 7A18007-03

Prepared & Analyzed: 01/18/17

% Moisture 10.0 0.1 % 10.0 0.00 20

Larson & Associates, Inc.
P.O. Box 50685
Midland TX, 79710

Project: Ross Gulch
Project Number: 16-0128-01
Project Manager: Mark Larson

Fax: (432) 687-0456

Notes and Definitions

S-GC Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

QM-05 The spike recovery was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

NR Not Reported

dry Sample results reported on a dry weight basis

RPD Relative Percent Difference

LCS Laboratory Control Spike

MS Matrix Spike

Dup Duplicate

Report Approved By:



Date: 1/18/2017

Brent Barron, Laboratory Director/Technical Director

This material is intended only for the use of the individual (s) or entity to whom it is addressed, and may contain information that is privileged and confidential.

If you have received this material in error, please notify us immediately at 432-686-7235.

Larson & Associates, Inc.
Environmental Consultants

507 N. Marientfield, Ste. 200
Midland, TX 79701
432-687-0901

Data Reported to: **Mark Larson**

DATE: **1-17-17** PAGE **1** OF **1**
PO #: **7A17009** LAB WORK ORDER #: **7A17009**
PROJECT LOCATION OR NAME: **Ross Gulch**
LA PROJECT #: **16-0128-01** COLLECTOR: **JM**

TRRP report? ☒ Yes ☐ No
TIME ZONE: **7A17009**
Time zone/State: **NM**

☒ S=SOIL ☐ P=PAINT
☐ W=WATER ☐ SL=SLUDGE
☐ A=AIR ☐ OT=OTHER

Field Sample I.D.	Lab #	Date	Time	Matrix
SS-1	-01	1-17-17	10:50	S
SS-2	-02	1-17-17	10:55	
SS-3	-03	1-17-17	10:59	
SS-4	-04	1-17-17	11:05	
SS-5	-05	1-17-17	11:11	
SS-6	-06	1-17-17	11:17	
SS-7	-07	1-17-17	11:21	
SS-8	-08	1-17-17	11:27	
SS-9	-09	1-17-17	11:38	
SS-10	-10	1-17-17	11:34	

# of Containers	HCl	HNO ₃	H ₂ SO ₄ ☐ NaOH ☐	ICE	UNPRESERVED

ANALYSES	
☒ BTEX ☐ MTBE ☐	☐ TPH 1005 ☐ TPH 1006 ☐
☐ TRPH 418.1 ☐	☐ GASOLINE MOD 8015 ☐
☐ DIESEL - MOD 8015 ☐	☐ VOC 8260 ☐
☐ SVOC 8270 ☐	☐ PAH 8270 ☐ HOLDPAH ☐
☐ 8081 PESTICIDES ☐ 8151 HERBICIDES ☐	☐ 8082 PCBs ☐
☐ TCLP - METALS (RCRA) ☐ TCLP VOC ☐	☐ TCLP - PEST ☐ HERB ☐ Semi-VOC ☐
☐ TOTAL METALS (RCRA) ☐ OTHER LIST ☐	☐ LEAD - TOTAL ☐ D.W. 200.8 ☐ TCLP ☐
☐ RCI ☐ TOX ☐ FLASHPOINT ☐	☐ TDS ☐ TSS ☐ % MOISTURE ☐ CYANIDE ☐
☐ PH ☐ HEXAVALENT CHROMIUM ☐	☐ EXPLOSIVES ☐ PENTACHLORATE ☐
☐ CHLORIDE ☐ ANIONS ☐ ALKALINITY ☐	

FIELD NOTES

TOTAL

RELINQUISHED BY: (Signature) **David Morris** DATE/TIME: **1-17-17** RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME: RECEIVED BY: (Signature)

RELINQUISHED BY: (Signature) DATE/TIME: **1-17-17** RECEIVED BY: (Signature)

PBE Lab

TURN AROUND TIME

NORMAL ☒ 1 DAY ☐ 2 DAY ☐ OTHER ☐

LABORATORY USE ONLY:

RECEIVING TEMP: **6.0** THERM #: **pcf L1**

CUSTODY SEALS - ☐ BROKEN ☐ INTACT ☐ NOT USED

CARRIER BILL #

☐ HAND DELIVERED

Appendix C

Photographs



Location Sign



Crude Oil Release Area Prior to Remediation, Viewing South, July 25, 2016

Appendix B – Photographs
Crude Oil Spill Remediation Report
Ross Gulch 8 Fed Com Well #2H
January 16, 2017



Crude Oil Release Area Post Remediation, Viewing South, October 5, 2016

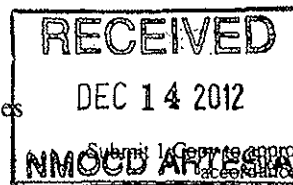
Appendix D

Initial and Final C-141

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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



Form C-141
Revised August 8, 2011

Release Notification and Corrective Action

njm 1300851642

Name of Company: EOG Resources, Inc. 7377		OPERATOR	☒ Initial Report	☐ Final Report
Address: 4000 N. Big Spring Ste 500 Midland, TX 79705		Contact: James Fischer		
Facility Name: Ross Gulch 8 Fed Com 1H		Telephone No. 432-686-3747		
		Facility Type: Oil and Gas tank battery		
Surface Owner: BLM		Mineral Owner: BLM	API No. 30-015-39171-00-X1	

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	8	26 South	31 East	330'	South	1540'	West	Eddy

Latitude 32.0636885 Longitude 103.8035110

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 10 BBLS	Volume Recovered: 0 BBLS
Source of Release: Tank Battery	Date and Hour of Occurrence: 12/05/2012 - 0300	Date and Hour of Discovery: 12/06/2012 - 0620
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Geoffrey R. Leking	
By Whom? James Fischer	Date and Hour: 12/12/2012 - 10:30	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.* Lost pressure to separator dump and liquid went through the flare, spraying the pasture west of location. Dump valve will be adjusted.		
Describe Area Affected and Cleanup Action Taken.* Oil sprayed an area in pasture covering approx. 100 yards x 150 yards. Spot mopped the most impacted area with absorbent pads. Bio-remediated in place the entire affected area with approx. 1,500 gallons of 4% Microblaze/Water mixture. This method was approved by BLM and soil samples will be taken to insure proper levels of TPH are reached.		

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: James Fischer		Approved by Environmental Specialist:	Signed By
Title: Environmental Manager		Approval Date: JAN 08 2013	Expiration Date:
E-mail Address: James.Fischer@eogresources.com		Conditions of Approval:	Attached ☐
Date: 12/12/2012 Phone: 432-686-3747		Remediation per OCD Rules & Guidelines. SUBMIT REMEDIATION PROPOSAL NOT LATER THAN: February 8, 2013	

* Attach Additional Sheets If Necessary

2RP-1486

Bratcher, Mike, EMNRD

From: Leking, Geoffrey R, EMNRD
Sent: Friday, December 14, 2012 10:39 AM
To: Bratcher, Mike, EMNRD
Cc: James_Fischer@eogresources.com
Subject: FW: Ross Gulch 8 FC #1H oil spill
Attachments: Ross Gulch 8 FC #1H C-141.PDF

Mike

James sent this to me. Thanks.

Geoffrey Leking
Environmental Specialist
NMOCD-Hobbs
1625 N. French Drive
Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leking@state.nm.us

From: James_Fischer@eogresources.com [mailto:James_Fischer@eogresources.com]
Sent: Wednesday, December 12, 2012 12:10 PM
To: Leking, Geoffrey R, EMNRD
Subject: Ross Gulch 8 FC #1H oil spill

Mr. Leking,
Here is the C-141 for a spill we had in Eddy county that I left you a message about this morning. The original is in the mail (certified). I apologize for the delay in reporting, the person that reported it to the BLM didn't know we needed to report to OCD as well.

Thanks,
James

James Fischer
Environmental Manager
EOG Resources, Inc. | Midland Division
Office: 432-686-3747 | Cell: 432-270-1170

Bratcher, Mike, EMNRD

From: Bratcher, Mike, EMNRD
Sent: Friday, December 14, 2012 12:47 PM
To: Leking, Geoffrey R, EMNRD
Cc: James_Fischer@eogresources.com
Subject: RE: Ross Gulch 8 FC #1H oil spill

Got it – Thanks

James,

Please copy me on anything sent to BLM.

Thank you,

Mike Bratcher
NMOCD District 2
811 S. First Street
Artesia, NM 88210
O: 575-748-1283 X108
C: 575-626-0857
F: 575-748-9720

From: Leking, Geoffrey R, EMNRD
Sent: Friday, December 14, 2012 10:39 AM
To: Bratcher, Mike, EMNRD
Cc: James_Fischer@eogresources.com
Subject: FW: Ross Gulch 8 FC #1H oil spill

Mike

James sent this to me. Thanks.

Geoffrey Leking
Environmental Specialist
NMOCD-Hobbs
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Hobbs, NM 88240
Office: (575) 393-6161 Ext. 113
Cell: (575) 399-2990
email: geoffreyr.leting@state.nm.us

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Sent: Wednesday, December 12, 2012 12:10 PM
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Subject: Ross Gulch 8 FC #1H oil spill

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Here is the C-141 for a spill we had in Eddy county that I left you a message about this morning. The original is in the

mail (certified). I apologize for the delay in reporting, the person that reported it to the BLM didn't know we needed to report to OCD as well.

Thanks,
James

James Fischer
Environmental Manager
EOG Resources, Inc. | Midland Division
Office: 432-686-3747 | Cell: 432-270-1170

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2RP-1486
State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-141
Revised August 19, 2011

Submit 1 copy to appropriate District Office in accordance with 19-15-29 NMAC.

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☒ Final Report

Name of Company: EOG Resources, Inc.	Contact: Zane Kurtz
Address: 5509 Champions Dr., Midland, TX 79705	Telephone No.: 432-425-2023
Facility Name: Ross Gulch 8 Fed Com #211	Facility Type: Tank Battery
Surface Owner: BLM	Mineral Owner: BLM
API No: 30-015-39171-00-X1	

LOCATION OF RELEASE

Unit Letter: N	Section: 8	Township: 26S	Range: 31E	Feet from the: 330	North/South Line: South	Feet from the: 1540	East/West Line: West	County: Eddy
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Latitude 32.0636885° Longitude -103.8035110°

NATURE OF RELEASE

Type of Release: Crude Oil	Volume of Release: 10 bbl	Volume Recovered: 0 bbl
Source of Release: Malfunction of dump valve at separator	Date and Hour of Occurrence: 12-05-2012, 3:00PM	Date and Hour of Discovery: 12-06-2012, 10:30AM
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Geoffrey Leking (OCD District 1)	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse:	

If a Watercourse was Impacted, Describe Fully *

Describe Cause of Problem and Remedial Action Taken. *Initial C-141 states - lost pressure to separator dump and liquid went through the flare, spraying the pasture west of location. Dump valve will be adjusted.

Describe Area Affected and Cleanup Action Taken. * Initial C-141 states - oil sprayed an area in pasture approx. 100 yards x 150 yards. Spot mopped the most impacted area with absorbent pads. Bio-remediated in place the entire affected area with approx. 1,500 gallons of 4% Microblaze/Water mixture. This method was approved by BLM and soil samples will be taken to ensure proper levels of TPH are reached. On October 4, 2016, SDR personnel applied Gator® bioremediation amendment to the spill and tilled the soil. On December 30, 2016 and January 17, 2017, LAI personnel collected confirmation samples (SS-1 through SS-10) which were analyzed for TPH (GRO, DRO and ORO) and BTEX. The laboratory reported BTEX and TPH below the RRAL. EOG requests no further action for 2RP-1486. The remediation area will be seeded with BLM seed blend No. 2.

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: <i>Zane Kurtz</i>	OIL CONSERVATION DIVISION		
Printed Name: Zane Kurtz, EOG Resources, Inc.	Approved by Environmental Specialist:		
Title: Sr. Environmental Representative	Approval Date:	Expiration Date:	
E-mail Address: zane_kurtz@eogresources.com	Conditions of Approval:	Attached ☐	
Date: 01-20-2017	Phone: 432-556-8074		

* Attach Additional Sheets If Necessary

2RP-1486