SITE INFORMATION

Report Type: Revised Work Plan 1RP-4294

General Site Information:						
Site:	**Red Hills North Unit #102**					
Company:	**EOG Resources, Inc.**					
Section, Township and Range	**Unit P**	**Sec. 1**	**T 25S**	**R 33E**		
Lease Number:	**API No. 30-025-32748**					
County:	**Lea**					
Release GPS:	**32.15297° N**			**103.51925° W**		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From intersection of HWY 128 & Delaware Basin Rd in Rural Lea county, travel west on 128 for 1.4 mi, turn south onto Vaca Lane for 2.2 mi, turn east onto lease road for 0.7 mi, turn south onto lease road for 1.95 mi, turn west onto lease road for 0.8 mi to location.					

Release Data:	
Date Released:	5/23/2016
Type Release:	Produced Water
Source of Contamination:	4" Poly Line
Fluid Released:	65 bbls
Fluids Recovered:	20 bbls

Official Communication:			
Name:	Zane Kurtz		Ike Tavarez
Company:	EOG Resources, Inc.		Tetra Tech
Address:	5509 Champions Drive		4000 N. Big Spring
			Ste 401
City:	Midland Texas, 797016		Midland, Texas
Phone number:	(432) 686-3667		(432) 687-8110
Fax:			
Email:	Zane_Kurtz@eogresources.com		Ike.Tavarez@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	***0***	
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	***0***	0
Total Ranking Score:	***0***	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

TETRA TECH

APPROVED
By Olivia Yu at 2:29 pm, May 01, 2017

April 3, 2017

NMOCD approves the delineation workplan for 1RP-4294 with these conditions for the proposed remediation:
1. Excavate to specified depths with placement of a liner in the areas around BH2 & BH10 on the pasture and BH1 on the pad.
2. Bottom confirmation samples sent to an accredited laboratory for chloride analysis.

Ms. Olivia Yu
Environmental Engineer Specialist
Oil Conservation Division, District 1
1625 North French Drive
Hobbs, New Mexico 88240

RE: Revised Work Plan - EOG Resources, Inc, Red Hills North Unit #102, Unit P, Section 1, Township 25S, Range 33E, Lea County, New Mexico, 1RP-4294

Ms. Yu:

On behalf of EOG Resources, Inc (EOG), Tetra Tech submits the following Work Plan - Soil Investigation and Assessment Report for the Red Hills North Unit #102 (site) located in Section 1, Township 25 South, Range 33 East, Lea County, New Mexico. The spill site coordinates are N 32.15297º, W 103.51925º. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on May 23, 2016, and released sixty-five (65) barrels of produced water due to a failed fuse on a 4" poly line. All free standing fluids were recovered with a vacuum truck and approximately twenty (20) barrels of produced water were recovered, leaving approximately forty five (45) barrels unrecovered. The impacted areas measured approximately 120' x 210' and 30' x 100', which are located east and west of the facility in the pasture, respectively. The impacted area of the pad measured approximately 30' x 425'. The initial C-141 form is included in Appendix A.

In response to the release, EOG contacted Safety & Environmental Solutions, Inc. (SESI) in Hobbs, New Mexico to attempt to delineate the release area at the site on May 26-28, 2016. SESI prepared a Delineation Report, dated June 15, 2016, detailing the findings of the assessment activities. Based on the results, SESI was unable to vertically delineate the chloride impact at the site.

Tetra Tech
4000 North Big Spring, Suite 401, Midland, TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

Groundwater

No water wells were listed within Section 1. According to New Mexico Office of State Engineer, a well is located in Section 13 with a depth to water of 185' below surface. In addition, the Chevron Texaco Trend Map shows an average depth to groundwater in this area is between 125' to 150' below surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the OCD Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Investigation

On November 2 and 9, 2016, Tetra Tech personnel were onsite to install twelve (12) boreholes (BH-1 through BH-12) to depths ranging from 10'-30' below surface to assess and define the chloride extents in the soils. The borehole placements were selected based on the location of the multiple lines and an overhead power line in the area. Selected samples were analyzed for Total Petroleum Hydrocarbons (TPH) analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The borehole sampling results are summarized in Table 1. The soil boring logs are included in Appendix C. The borehole locations are shown on Figure 3. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix D.

Referring to Table 1, none of the samples for TPH and BTEX showed concentrations above the laboratory reporting limits or above the RRAL's.

East Pasture Area

A total of 10 (ten) boreholes were installed in the east pasture area. The deepest chloride impact was encountered in the areas of boreholes (BH-1, BH-2 and BH-3) with concentration highs of 3,100 mg/kg (4-5'), 12,500 mg/kg (0-1') and 5,310 mg/kg (4-5'), respectively. The chloride concentrations declined with depth to 121 mg/kg BH-1 (9-10'), 344 mg/kg BH-2 (19-20') and 18.3 mg/kg BH-3 (14-15').

In addition, boreholes (BH-4, BH-5, and BH-6) also showed chloride concentrations ranging from 115 mg/kg to 5,390 mg/kg at depths ranging from 3.0' to 5.0' below surface. However, the chloride concentrations then declined with depth with concentrations of 76.9 mg/kg (6-7'), 173 mg/kg (9-10') and 12.1 mg/kg (14-15'), respectively.

The areas of boreholes (BH-8 and BH-10) showed a shallow chloride impact to the soils to a depth of approximately 4-5' below surface. Borehole (BH-10) did show chloride spikes in the deeper soils of 1,420 mg/kg at 9-10' and 1,540 mg/kg at 14-15', which appears that borehole sloughing may have occurred and possibly cross-contaminated the deeper samples.

The areas of boreholes (BH-7 and BH-9) did not show a significant chloride impact to the soils, with highs of 804 mg/kg at 4-5' and 534 mg/kg at 2-3' below surface, respectively. The boreholes declined with depth and concentrations do not appear to be an environmental concern.

West Pasture Area

A total of two (2) boreholes were installed in the west pasture area and showed a shallow impact to the area. Boreholes (BH-11 and BH-12) showed chloride concentrations in the shallow soils ranging from 2,780 mg/kg at 2-3' (BH-11) to 3,280 mg/kg at 0-1' (BH-12). The chloride significantly declined with depth to 364 mg/kg at 6-7' and 163 mg/kg at 4-5' below surface, respectively.

Pad Area

EOG initially proposed the impacted soil on the pad be deferred until abandonment, due to safety concerns. According to EOG, multiple lines are located on the pad and the main lease road from the area runs through the facility pad. The NMOCD rejected the recommendations to defer the impact and requested EOG to install trenches or boreholes to assess the impact on the pad.

In order to evaluate the impact to the soils on the pad, Tetra Tech personnel returned to the site on January 27, 2017, and installed a total of five (5) boreholes (BH-1 through BH-5) to depths ranging between 7'-25' below surface. Selected samples were analyzed for Total Petroleum Hydrocarbons (TPH) analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The borehole sampling results are summarized in Table 2. The soil boring logs are included in Appendix C. The borehole locations are shown on Figure 3. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix D.

Referring to Table 2, all of the samples analyzed for TPH or BTEX did not show any concentrations exceeding the laboratory reporting limits. However, the areas of boreholes (BH-1 through BH-5) showed a shallow chloride impact to the soils. The areas of boreholes (BH-1, BH-3, and BH-5) showed chloride highs of 9,550 mg/kg, 873 mg/kg, and 4,220 mg/kg at 0-1' below surface, respectively. The chloride concentrations in these areas then declined with depth to 207 mg/kg at 6-7' (BH-1), 165 mg/kg at 4-5' (BH-4), and 323 mg/kg at 6-7' (BH-5). Additionally, the areas of boreholes (BH-2 and BH-4) showed chloride highs of 1,430 mg/kg and 5,860 mg/kg at 2-3' below surface, respectively. These areas showed chloride concentrations that declined with depth to below 250 mg/kg at 4-5', with concentrations of 164 mg/kg (BH-2) and 165 mg/kg (BH-4).

TETRA TECH

Proposed Work Plan

Based on the results, EOG proposes to excavate the impacted areas in the pasture as shown on Figure 4 and highlighted (green) in Table 1. In order to remove the chloride impacted soils, the areas of boreholes (BH-8, BH-10, and BH-12) will be excavated to approximately 2.0 to 3.0', the areas of boreholes (BH-4, BH-5, BH-6 and BH-11) will excavated to 4.0 to 5.0', and the areas of boreholes (BH-1, BH-2, and BH-3) will be excavated to 6.0 to 7.0' below surface. The impacted soils on the pad in the areas of boreholes (BH-1 and BH-4) will be scraped to 2-3' below surface, where feasible. The excavated areas will be backfilled with clean material to surface grade. All of the excavated material will be transported offsite for proper disposal.

In the area of the Plains and the EOG pipelines, limited excavation will be performed in the vicinity of the lines due to safety concerns. In addition, EOG will be removing as much impacted material as practicable on the pad. The area of BH-5 has multiple poly lines in the area and only limited to no excavation will be performed in this area. If it's a safely concern, the impact or any remaining impact not accessible will be defer until abandonment

The proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns for onsite personnel. As such, Tetra Tech will excavate the impacted soils to the maximum extent practicable.

Report

Upon completion, a final report will be submitted to the NMOCD. If you have any questions or comments concerning the assessment or the proposed remediation activities for this site, please call me at (432) 682-4559.

Sincerely,

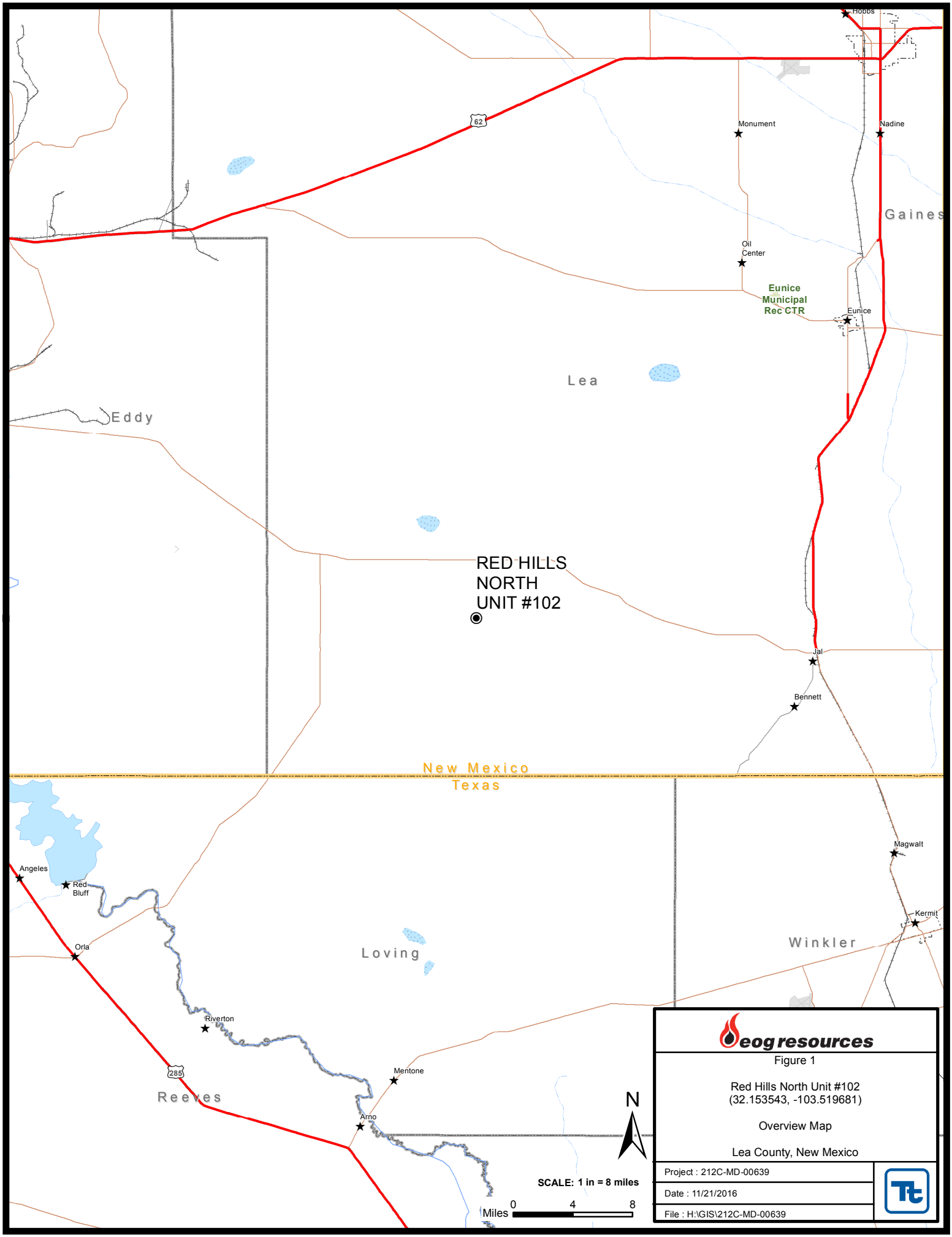
Tetra Tech, Inc.

Ike Tavarez,

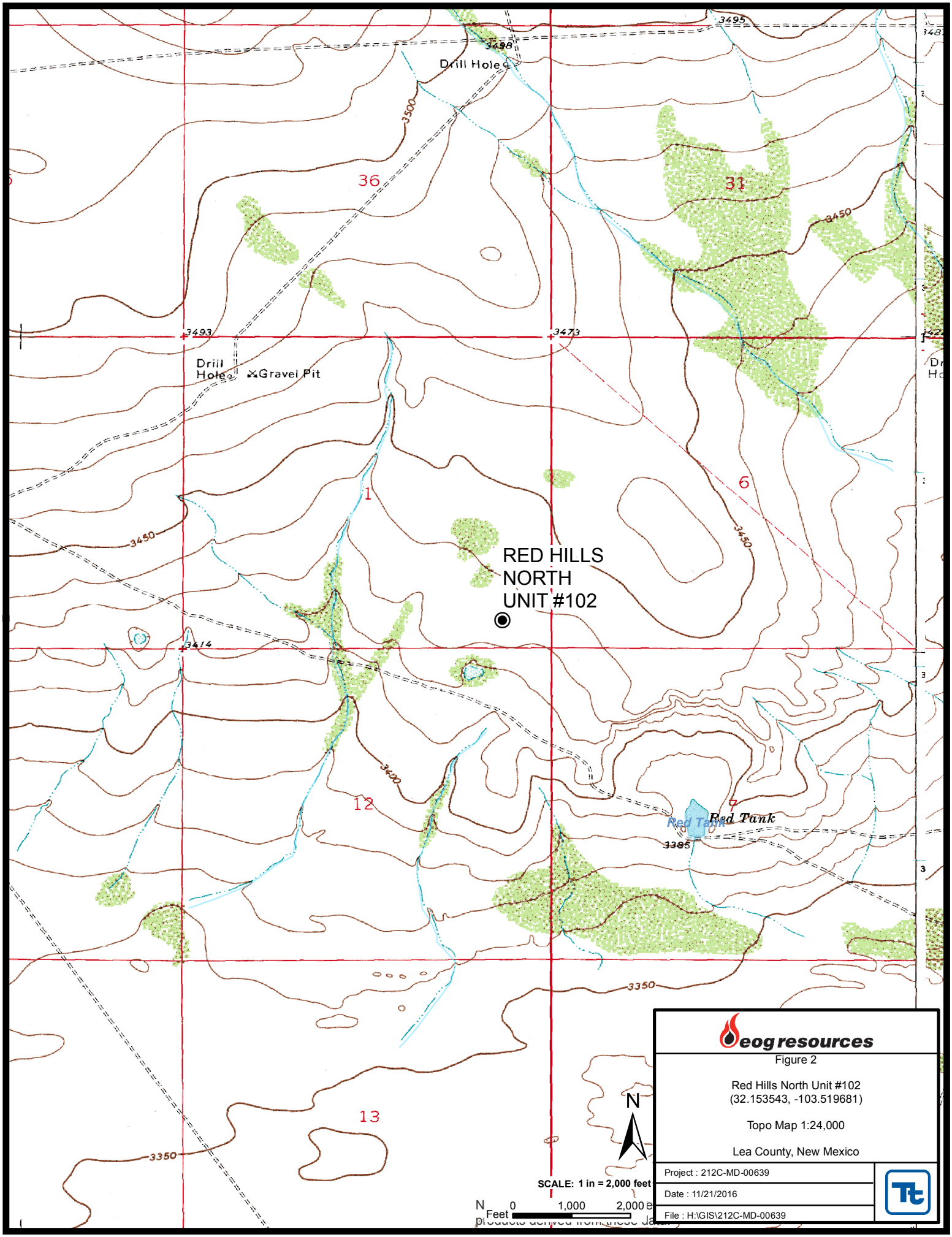
Senior Project Manager, P.G.

cc: Zane Kurtz – EOG
Shelly Tucker - BLM

Figures



Mapped By: Isabel Marmolejo



eog resources

Figure 2

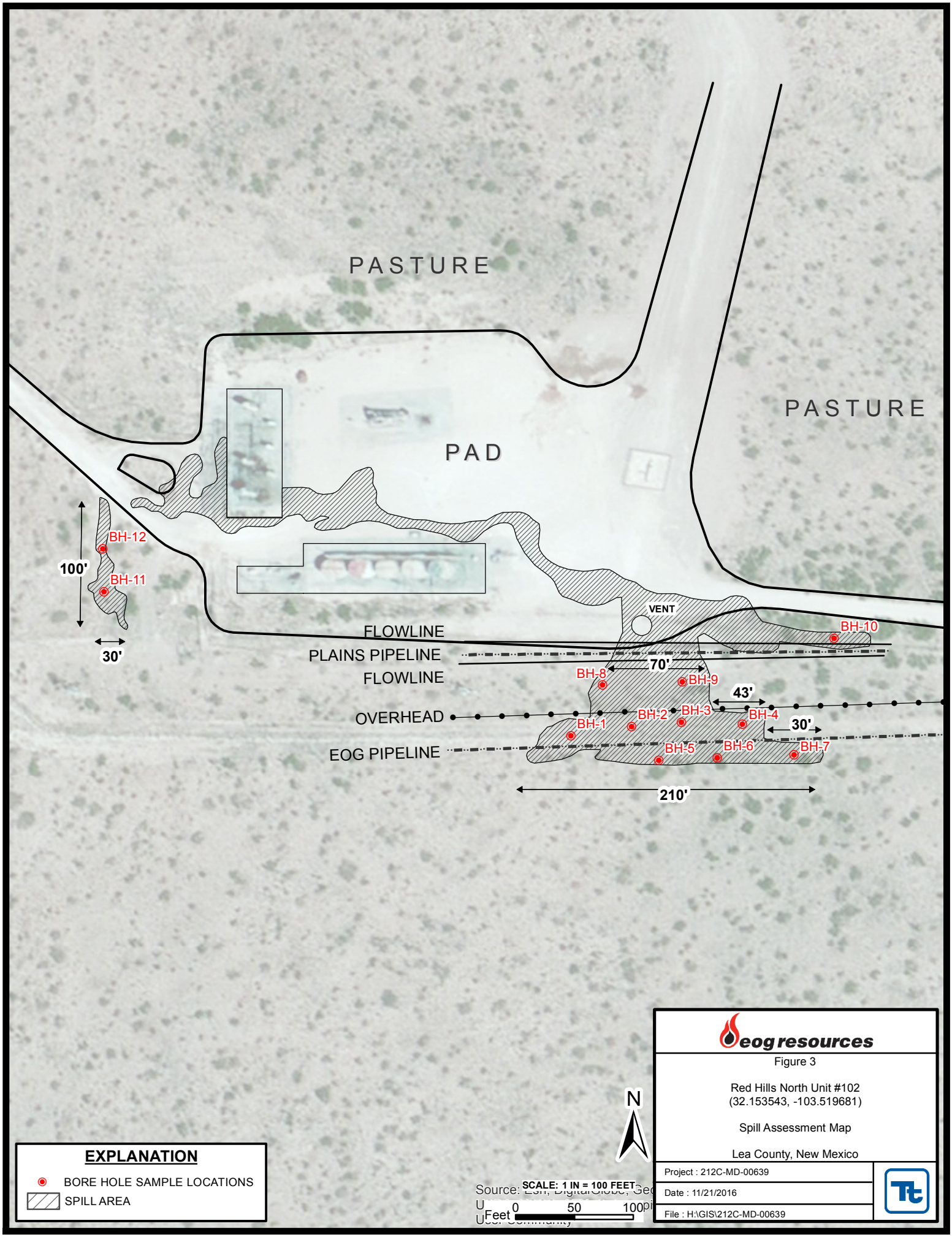
Red Hills North Unit #102
(32.153543, -103.519681)

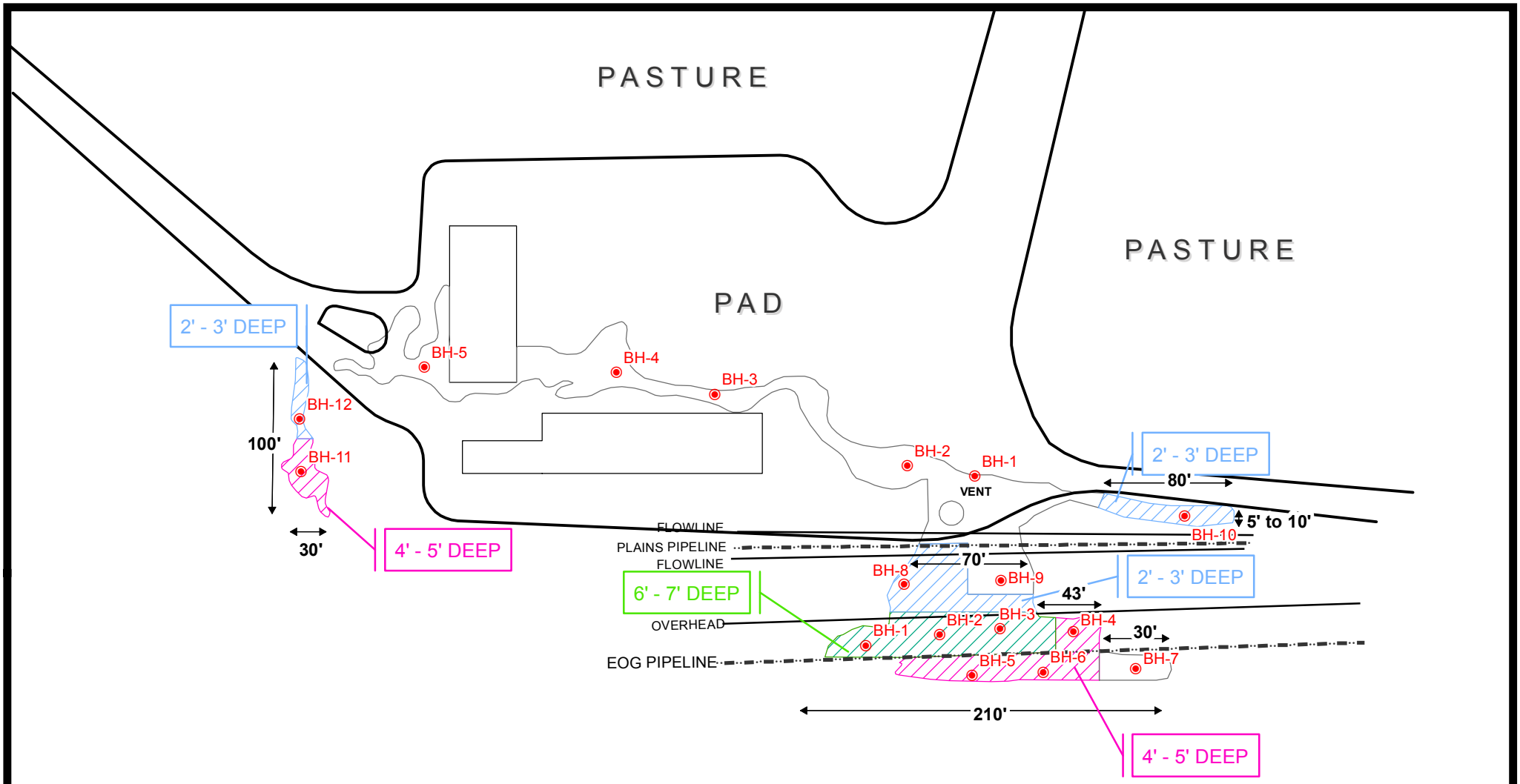
Topo Map 1:24,000

Lea County, New Mexico

Project : 212C-MD-00639	
Date : 11/21/2016	
File : H:\GIS\212C-MD-00639	

Mapped By: Isabel Marmolejo


PASTURE
PASTURE
PAD
BH-12
BH-11
100'
30'
VENT
BH-10
FLOWLINE
PLAINS PIPELINE
FLOWLINE
70'
BH-8
BH-9
43'
OVERHEAD
BH-1
BH-2
BH-3
BH-4
30'
EOG PIPELINE
BH-5
BH-6
BH-7
210'
N
SCALE: 1 IN = 100 FEET
0
50
100
Feet
EXPLANATION
BORE HOLE SAMPLE LOCATIONS
SPILL AREA
eog resources
Figure 3
Red Hills North Unit #102
(32.153543, -103.519681)
Spill Assessment Map
Lea County, New Mexico
Project : 212C-MD-00639
Date : 11/21/2016
File : H:\GIS\212C-MD-00639
Mapped By: Isabel Marmolejo



EXPLANATION

- BORE HOLE SAMPLE LOCATIONS
- PROPOSED EXCAVATION AREAS

N

SCALE: 1 IN = 100 FEET

Feet 0 50 100

eog resources

Figure 4

Red Hills North Unit #102
(32.153543, -103.519681)

Proposed Excavation Areas & Depths Map

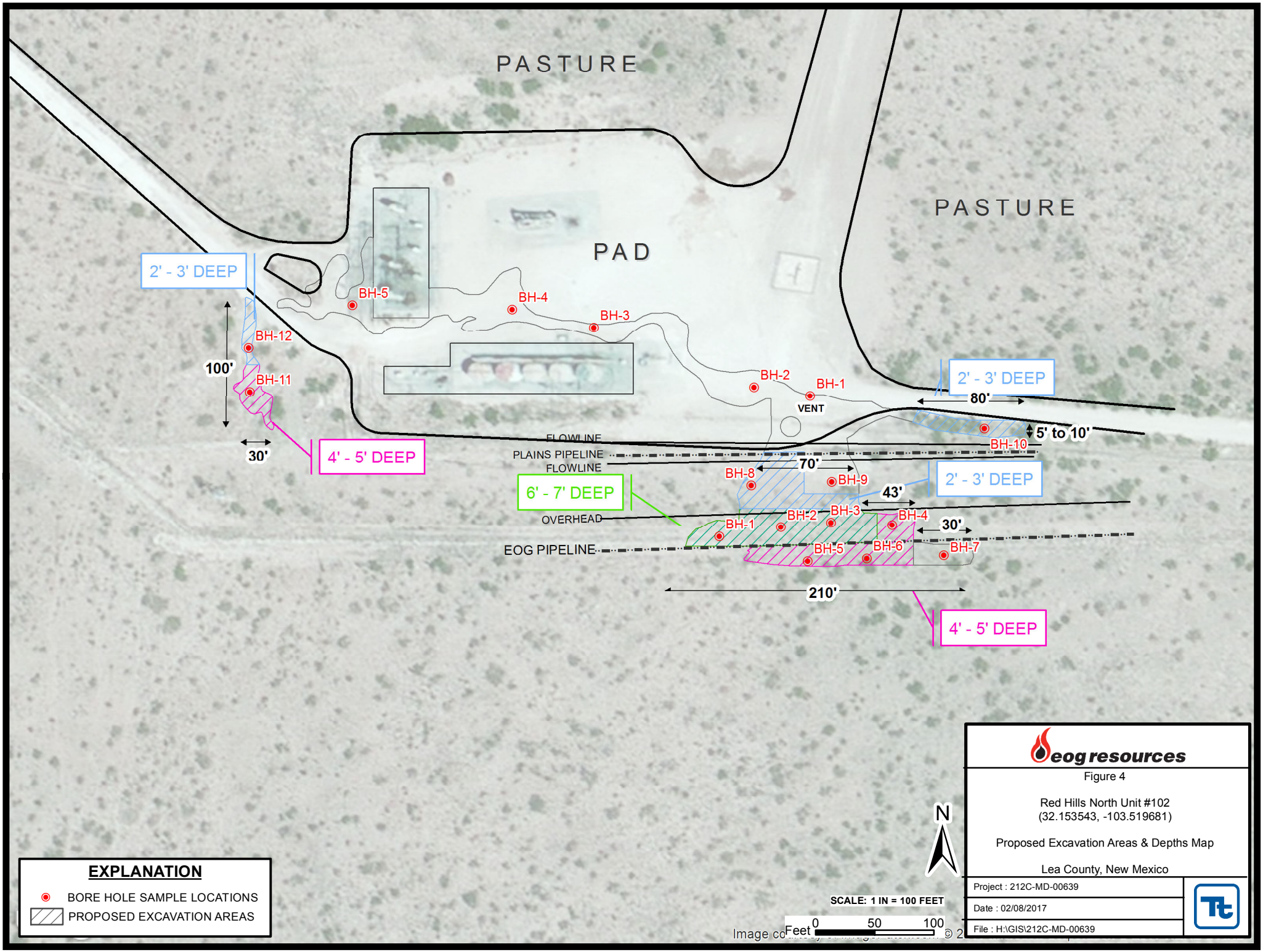
Lea County, New Mexico

Project : 212C-MD-00639

Date : 02/08/2017

File : H:\GIS\212C-MD-00639

Mapped By: Isabel Marmolejo


PASTURE
PAD
PASTURE
2' - 3' DEEP
BH-5
BH-4
BH-3
BH-12
100'
BH-11
30'
4' - 5' DEEP
BH-2
BH-1
VENT
2' - 3' DEEP
80'
5' to 10'
BH-10
FLOWLINE
PLAINS PIPELINE
FLOWLINE
70'
BH-8
BH-9
2' - 3' DEEP
43'
6' - 7' DEEP
OVERHEAD
BH-1
BH-2
BH-3
BH-4
30'
EOG PIPELINE
BH-5
BH-6
BH-7
210'
4' - 5' DEEP
N
SCALE: 1 IN = 100 FEET
Feet 0 50 100
EXPLANATION
BORE HOLE SAMPLE LOCATIONS
PROPOSED EXCAVATION AREAS
eog resources
Figure 4
Red Hills North Unit #102
(32.153543, -103.519681)
Proposed Excavation Areas & Depths Map
Lea County, New Mexico
Project : 212C-MD-00639
Date : 02/08/2017
File : H:\GIS\212C-MD-00639
Mapped By: Isabel Marmolejo

Tables

Table 1
EOG Resources
Red Hills North Unit #102
Pasture Area
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-1	11/2/2016	0-1	-	X		-	-	-	-	-	-	-	-	831
	"	2-3	-	X		-	-	-	-	-	-	-	-	1,470
	"	4-5	-	X		-	-	-	-	-	-	-	-	3,100
	"	6-7	-	X		-	-	-	-	-	-	-	-	1,870
	"	9-10	-	X		-	-	-	-	-	-	-	-	121
	"	14-15	-	X		-	-	-	-	-	-	-	-	163
BH-2	11/2/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	12,500
	"	2-3	-	X		-	-	-	-	-	-	-	-	4,680
	"	4-5	-	X		-	-	-	-	-	-	-	-	4,320
	"	6-7	-	X		-	-	-	-	-	-	-	-	3,750
	"	9-10	-	X		-	-	-	-	-	-	-	-	1,030
	"	14-15	-	X		-	-	-	-	-	-	-	-	936
	"	19-20	-	X		-	-	-	-	-	-	-	-	344
BH-3	11/2/2016	0-1	-	X		-	-	-	-	-	-	-	-	4,450
	"	2-3	-	X		-	-	-	-	-	-	-	-	4,960
	"	4-5	-	X		-	-	-	-	-	-	-	-	5,310
	"	6-7	-	X		-	-	-	-	-	-	-	-	4,450
	"	9-10	-	X		-	-	-	-	-	-	-	-	456
	"	14-15	-	X		-	-	-	-	-	-	-	-	18.3
BH-4	11/2/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	2,380
	"	2-3	-	X		-	-	-	-	-	-	-	-	5,380
	"	4-5	-	X		-	-	-	-	-	-	-	-	3,510
	"	6-7	-	X		-	-	-	-	-	-	-	-	76.9
	"	9-10	-	X		-	-	-	-	-	-	-	-	253

212C-MD-00639
Xenco Labs

Table 1
EOG Resources
Red Hills North Unit #102
Pasture Area
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-5	11/2/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	2,270
	"	2-3	-	X		-	-	-	-	-	-	-	-	3,320
	"	4-5	-	X		-	-	-	-	-	-	-	-	5,390
	"	6-7	-	X		-	-	-	-	-	-	-	-	268
	"	9-10	-	X		-	-	-	-	-	-	-	-	173
BH-6	11/2/2016	0-1	-	X		-	-	-	-	-	-	-	-	115
	"	2-3	-	X		-	-	-	-	-	-	-	-	2,460
	"	4-5	-	X		-	-	-	-	-	-	-	-	2,710
	"	6-7	-	X		-	-	-	-	-	-	-	-	176
	"	9-10	-	X		-	-	-	-	-	-	-	-	49.3
	"	14-15	-	X		-	-	-	-	-	-	-	-	12.1
BH-7	11/2/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	22.8
	"	2-3	-	X		-	-	-	-	-	-	-	-	294
	"	4-5	-	X		-	-	-	-	-	-	-	-	804
	"	6-7	-	X		-	-	-	-	-	-	-	-	63.6
	"	9-10	-	X		-	-	-	-	-	-	-	-	86.3
	"	14-15	-	X		-	-	-	-	-	-	-	-	267
	"	19-20	-	X		-	-	-	-	-	-	-	-	255
BH-8	11/2/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00198	<0.00198	<0.00198	<0.00149	14,700
	"	2-3	-	X		-	-	-	-	-	-	-	-	3,150
	"	4-5	-	X		-	-	-	-	-	-	-	-	246
	"	6-7	-	X		-	-	-	-	-	-	-	-	130
	"	9-10	-	X		-	-	-	-	-	-	-	-	285
	"	14-15	-	X		-	-	-	-	-	-	-	-	281

212C-MD-00639
Xenco Labs

Table 1
EOG Resources
Red Hills North Unit #102
Pasture Area
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-9	11/9/2016	0-1	-	X		-	-	-	-	-	-	-	-	302
	"	2-3	-	X		-	-	-	-	-	-	-	-	534
	"	4-5	-	X		-	-	-	-	-	-	-	-	209
	"	6-7	-	X		-	-	-	-	-	-	-	-	128
	"	9-10	-	X		-	-	-	-	-	-	-	-	137
	"	14-15	-	X		-	-	-	-	-	-	-	-	156
BH-10	11/9/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	1,700
	"	2-3	-	X		-	-	-	-	-	-	-	-	1,720
	"	4-5	-	X		-	-	-	-	-	-	-	-	101
	"	6-7	-	X		-	-	-	-	-	-	-	-	422
	"	9-10	-	X		-	-	-	-	-	-	-	-	1,420
	"	14-15	-	X		-	-	-	-	-	-	-	-	1,540
	"	19-20	-	X		-	-	-	-	-	-	-	-	132
	"	24-25	-	X		-	-	-	-	-	-	-	-	409
	"	29-30	-	X		-	-	-	-	-	-	-	-	146
BH-11	11/9/2016	0-1	-	X		<14.9	<14.9	<14.9	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	3,280
	"	2-3	-	X		-	-	-	-	-	-	-	-	3,250
	"	4-5	-	X		-	-	-	-	-	-	-	-	2,890
	"	6-7	-	X		-	-	-	-	-	-	-	-	364
	"	9-10	-	X		-	-	-	-	-	-	-	-	386
	"	14-15	-	X		-	-	-	-	-	-	-	-	107

Table 1
EOG Resources
Red Hills North Unit #102
Pasture Area
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-12	11/9/2016	0-1	-	X										3,010
	"	2-3	-	X		-	-	-	-	-	-	-	-	2,780
	"	4-5	-	X		-	-	-	-	-	-	-	-	163
	"	6-7	-	X		-	-	-	-	-	-	-	-	54.4
	"	9-10	-	X		-	-	-	-	-	-	-	-	170
	"	14-15	-	X		-	-	-	-	-	-	-	-	79.7

(-) Not Analyzed

(BEB) Below Excavation Bottom

Proposed Excavation Depths

212C-MD-00639
Xenco Labs

Table 2
EOG Resources
Red Hills North Unit #102
Pad Area
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
BH-1	1/27/2017	0-1	-	X		<15.0	<15.0	<15.0	<0.00149	<0.00199	<0.00199	<0.00199	<0.00149	**9,550**
	"	2-3	-	X		-	-	-	-	-	-	-	-	**7,550**
	"	4-5	-	X		-	-	-	-	-	-	-	-	**1,480**
	"	6-7	-	X		-	-	-	-	-	-	-	-	207
	"	9-10	-	X		-	-	-	-	-	-	-	-	132
BH-2	1/27/2017	0-1	-	X		-	-	-	-	-	-	-	-	37.8
	"	2-3	-	X		-	-	-	-	-	-	-	-	**1,430**
	"	4-5	-	X		-	-	-	-	-	-	-	-	164
	"	6-7	-	X		-	-	-	-	-	-	-	-	18.3
BH-3	1/27/2017	0-1	-	X		<15.0	<15.0	<15.0	<0.00151	<0.00201	<0.00201	<0.00201	<0.00151	873
	"	2-3	-	X		-	-	-	-	-	-	-	-	844
	"	4-5	-	X		-	-	-	-	-	-	-	-	232
	"	6-7	-	X		-	-	-	-	-	-	-	-	381
	"	9-10	-	X		-	-	-	-	-	-	-	-	29.9
	"	14-15	-	X		-	-	-	-	-	-	-	-	<25.0
	"	19-20	-	X		-	-	-	-	-	-	-	-	32.7
	"	24-25	-	X		-	-	-	-	-	-	-	-	61.9
BH-4	1/27/2017	0-1	-	X		-	-	-	-	-	-	-	-	**5,360**
	"	2-3	-	X		-	-	-	-	-	-	-	-	**5,860**
	"	4-5	-	X		-	-	-	-	-	-	-	-	165
	"	6-7	-	X		-	-	-	-	-	-	-	-	<24.8
	"	9-10	-	X		-	-	-	-	-	-	-	-	36.1
	"	14-15	-	X		-	-	-	-	-	-	-	-	29.6
	"	19-20	-	X		-	-	-	-	-	-	-	-	27.9
BH-5	1/27/2017	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	<0.00200	<0.00200	<0.00150	**4,220**
	"	2-3	-	X		-	-	-	-	-	-	-	-	**3,100**
	"	4-5	-	X		-	-	-	-	-	-	-	-	534
	"	6-7	-	X		-	-	-	-	-	-	-	-	323
	"	9-10	-	X		-	-	-	-	-	-	-	-	324
	"	14-15	-	X		-	-	-	-	-	-	-	-	369
	"	19-20	-	X		-	-	-	-	-	-	-	-	45.8
	"	24-25	-	X		-	-	-	-	-	-	-	-	346

(-) Not Analyzed

(BEB) Below Excavation Bottom

Proposed Excavation Depths

212C-MD-00639
Xenco Labs

Photos

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

Pasture Area

View West – Area of BH-1

View West – Area of BH-2

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View South – Area of BH-3

View West – Area of BH-4

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View West – Area of BH-5

View East – Areas of BH-6 and BH-7

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View North – Area of BH-8

View Northwest – Area of BH-9

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View East – Area of BH-10

View South – Area of BH-11

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View South – Area of BH-12

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

TETRA TECH

Pad Area

View South – Area of BH-1

View North – Area of BH-2

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View South – Area of BH-3

View North – Area of BH-4

EOG Resources, Inc.
Red Hills North Unit #102
Lea County, New Mexico

View East – Area of BH-5

Appendix A

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company EOG Resources, Inc.	Contact Zane Kurtz
Address 5509 Champions Drive, Midland, TX 79706	Telephone No. 432-425-2023
Facility Name Red Hills North Unit #102	Facility Type Oil Well

Surface Owner BLM	Mineral Owner BLM	API No. 30-025-32748

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
P	1	25S	33E	510"	S	660'	E	Lea

Latitude 32.1535 **Longitude** -103.5197

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 65	Volume Recovered 20
Source of Release 4" Poly Line	Date and Hour of Occurrence 5-23-2016	Date and Hour of Discovery 1500
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? NA	
By Whom? NA	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
4" water transfer poly line failed from a bad fuse. Released approximately 65bbls. Recovered 20bbls. Release ran across pad into pasture. One call was placed and initial delineation assessment will commence 5-26-2016. Once initial assessment is complete, then remediation work plan will be submitted to BLM and OCD for approval.

Describe Area Affected and Cleanup Action Taken.*

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: 5-25-2016	OIL CONSERVATION DIVISION	
Printed Name: Zane Kurtz	Approved by Environmental Specialist:	
Title: Sr. Environmental Rep., EOG Resources, Inc.	Approval Date:	Expiration Date:
E-mail Address: zane_kurtz@eogresources.com	Conditions of Approval:	Attached ☐
Date: 5-25-2016 Phone: 432-425-2023		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
EOG Resources - Red Hills North Unit #102
Lea County, New Mexico

24 South 32 East

6	5	4	3	2	1
7	8	9	10 20	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33 290	34	35	36

24 South 33 East

6	5	4	3	2	1
7	8	9	10 24.6	11	12
18	17	16	15	14	13
19	20	21	22	23 208	24 16.9
30	29	28	27	26	25
31	32	33 93.2	34	35	36

24 South 34 East

6	5	4 475	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32 290	33	34	35	36

25 South 33 East

6	5 90	4	3	2	1 SITE
7	8	9	10	11	12
18	17	16	15	14	13 185
19	20 200	21 120	22	23	24
30	29	28	27 125	26 110	25
31 257	32	33	34	35	36

25 South 34 East

6	5	4	3	2	1 260
7	8	9	10	11	12
18	17	16	15 135	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

26 South 32 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 333 180	22	23	24
30	29	28	27	26	25
31 295	32	33	34	35	36

26 South 33 East

6	5	4	3 175	2	1
7	8	9	10	11 145	12 200
18	17	16	15	14 135	13
19	20	21 120	22	23	24
30	29	28	27 125	26	25
31	32	33	34	35	36

26 South 34 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

123 Tetra Tech installed temporary wells and field water level

143 NMOCD Groundwater map well location

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02312		LE	1	2	1	05	25S	33E	632241	3559687*	150	90	60
C 02313		LE	2	3	3	26	25S	33E	636971	3552098*	150	110	40
C 02373 CLW317846	O	LE	2	1	1	13	25S	33E	638518	3556544*	625	185	440
C 02373 S		LE	1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

Record Count: 4

PLSS Search:

Township: 25S **Range:** 33E

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02312		LE	1	2	1	05	25S	33E	632241	3559687*	150	90	60
C 02313		LE	2	3	3	26	25S	33E	636971	3552098*	150	110	40
C 02373 CLW317846	O	LE	2	1	1	13	25S	33E	638518	3556544*	625	185	440
C 02373 S		LE	1	2	1	13	25S	33E	638721	3556549*	625	185	440

Average Depth to Water: **142 feet**

Minimum Depth: **90 feet**

Maximum Depth: **185 feet**

Record Count: 4

PLSS Search:

Township: 25S **Range:** 33E

***UTM location was derived from PLSS - see Help**

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)
(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-basin Code	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
C 02299	CUB	LE	4	4	2	24	25S	34E	649417	3554478*	350	300	50
C 02314		LE	2	4	2	15	25S	34E	646170	3556243*	175	135	40
C 02315		LE	2	4	2	15	25S	34E	646170	3556243*	175	135	40
C 02316		LE	3	4	3	29	25S	34E	642003	3551967*	100	50	50
C 02317		LE	3	4	3	29	25S	34E	642003	3551967*	100	50	50
C 02401		LE	2	2	1	01	25S	34E	648534	3559896*	275	260	15

Average Depth to Water: **155 feet**

Minimum Depth: **50 feet**

Maximum Depth: **300 feet**

Record Count: 6

PLSS Search:

Township: 25S **Range:** 34E

***UTM location was derived from PLSS - see Help**

Appendix C

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-1 (Pasture Area)**			
GPS	**32.15297 -103.518925**			
Project #:	**212C-MD-00639**			
Total Depth	**15'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Fine-Med Sand*	*Lt. Stain/No Odor*		*1,420*
2-3	*Light Brown, Silty Sand*	*No Stain or odor*		*1,420*
4-5	*Light Brown, Silty Sand*	*No Stain or odor*		*4,700*
6-7	*Light Brown-White, Dense Caliche*	*No Stain or odor*		*710*
9-10	*Whitish,Silty Sand*	*No Stain or odor*		*2,410*
14-15	*White-Silty Sand*	*No Stain or odor*	*300*	*373*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-2 (Pasture Area)**			
GPS	**32.15299 -103.51913**			
Project #:	**212C-MD-00639**			
Total Depth	**20'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark Brown, Fine Silty Sand*	*No Stain or odor*	*-*	*Over Limit*
2-3	*Light Brown, Fine silty sand*	*No Stain or odor*	*-*	*12,590*
4-5	*Light Brown, Fine silty sand*	*No Stain or odor*	*-*	*9,690*
6-7	*Light Brown, Dense Silty Sand*	*No Stain or odor*	*-*	*8,850*
9-10	*Light Brown, Silty Sand, Very Dense*	*No Stain or odor*	*-*	*2,800*
14-15	*White Caliche*	*No Stain or odor*	*500*	*1,410*
19-20	*Whte Loose Caliche, Silty Sand*	*No Stain or odor*	*-*	*548*
	0			

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-3 (Pasture Area)**			
GPS	**32.15297 -103.51905**			
Project #:	**212C-MD-00639**			
Total Depth	**15'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark Brown Fine silty Sand*	*No Stain/No Odor*	*-*	*6,790*
2-3	*Dark Brown Fine silty Sand*	*No Stain or odor*	*-*	*4,500*
4-5	*Dark Brown, silty Sand*	*No Stain or odor*	*-*	*4,950*
6-7	*Brown, Loose Silty Sand*	*No Stain or odor*	*-*	*3,500*
9-10	*Light Brown Silty Sand*	*No Stain or odor*	*-*	*430*
14-15	*White Friable Caliche*	*No Stain or odor*	*-*	*340*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-4 (Pasture Area)**			
GPS	**32.15298 -103.51890**			
Project #:	**212C-MD-00639**			
Total Depth	**10'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark Brown, Fine Silty Sand*	*No Stain or odor*	*-*	*2,970*
2-3	*Dark Brown, Silty Clay*	*No Stain or odor*	*-*	*6,770*
4-5	*Brown Silty Clay*	*No Stain or odor*	*-*	*3,660*
6-7	*Friable White Caliche*	*No Stain or odor*	*-*	*202*
9-10	*Friable White Caliche*	*No Stain or odor*	*-*	*437*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-5 (Pasture Area)**			
GPS	**32.15293 -103.51911**			
Project #:	**212C-MD-00639**			
Total Depth	**10'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark brown, Fine silty sand*	*No Stain or odor*	*-*	*2,890*
2-3	*Brown Loose Silty sand*	*No Stain or odor*	*-*	*4,360*
4-5	*Light Brown, Silty-sand*	*No Stain or odor*	*-*	*6,800*
6-7	*Redish Brown fine Silty sand*	*No Stain or odor*	*-*	*437*
9-10	*Light Brown, Silty-Sand*	*No Stain or odor*	*-*	*252*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-6 (Pasture Area)**			
GPS	**32.15292 -103.51896**			
Project #:	**212C-MD-00639**			
Total Depth	**15'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark Brown, Fine Silty Sand*	*No Stain or odor*	*-*	*400*
2-3	*Light Brown, Fine Silty Sand, some caliche*	*No Stain or odor*	*-*	*3,150*
4-5	*Light Brown, Fine Silty Sand, some caliche*	*No Stain or odor*	*-*	*3,530*
6-7	*Whitish-brown, fine silty sand*	*No Stain or odor*	*-*	*785*
9-10	*White friable caliche*	*No Stain or odor*	*-*	*457*
14-15	*Dense White Caliche*	*No Stain or odor*	*180*	*428*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-7 (Pasture Area)**			
GPS	**32.15291 -103.51879**			
Project #:	**212C-MD-00639**			
Total Depth	**20'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark brown, fine silty sand*	*No Stain or odor*	*-*	*287*
2-3	*Light brown, fine silty sand*	*No Stain or odor*	*-*	*416*
4-5	*Light brown, fine silty sand*	*No Stain or odor*	*-*	*1,700*
6-7	*Light brown, fine silty sand*	*No Stain or odor*	*-*	*1,130*
9-10	*White friable caliche*	*No Stain or odor*	*350*	*381*
14-15	*Dense White caliche*	*No Stain or odor*	*-*	*1,010*
19-20	*Dense reddish-brown silty sand*	*No Stain or odor*	*210*	*450*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-8 (Pasture Area)**			
GPS	**32.15304 -103.51924**			
Project #:	**212C-MD-00639**			
Total Depth	**15'**			
Date Installed:	**11/2/2016**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Dark brown, fine silty sand*	*No Stain or odor*	*-*	*8,970*
2-3	*Dense, white caliche*	*No Stain or odor*	*-*	*2,930*
4-5	*Dense, white caliche*	*No Stain or odor*	*-*	*859*
6-7	*Dense, white caliche*	*No Stain or odor*	*-*	*1,510*
9-10	*white caliche, silty sand*	*No Stain or odor*	*220*	*417*
14-15	*white caliche, silty sand*	*No Stain or odor*	*290*	*430*

Client:	EOG			
Site Name	Red Hills North Unit #102			
Boring/Well:	BH-9 (Pasture Area)			
GPS	32.15312 -103.51898			
Project #:	212c-md-00639			
Total Depth	15ft			
Date Installed:	11/9/2016			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Brown Fine-medium Silty loose sand.*	*No odor/light stain*	-	*425*
2-3	*Brown Fine-medium Silty loose sand.*	*No odor/light stain*	-	*611*
4-5	*Pink/white Fine-medium silty loose sand*	*No odor/light stain*	-	*707*
6-7	*Pink/white Fine-medium silty loose sand*	*No odor/No stain*	-	*700*
9-10	*Pink/White, fine-medium silty loose sand, caliche*	*No odor/No stain*	*220*	*530*
14-15	*Pink/White, fine-medium silty loose sand,caliche*	*No odor/No stain*	*200*	*435*

Client:	EOG			
Site Name	Red Hills North Unit #102			
Boring/Well:	BH-10 (Pasture Area)			
GPS	32.15318 -103.51865			
Project #:	212C-MD-00639			
Total Depth	30ft			
Date Installed:	11/9/2016			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Brown Fine-medium silty sand*	*No odor/No staining*	*-*	*707*
2-3	*Brown Fine-medium silty sand*	*No odor/No staining*	*-*	*707*
4-5	*Pink-white fine-medium silty loose sand*	*No odor/No staining*	*-*	*720*
6-7	*Pink-white fine-medium silty loose sand*	*No odor/No staining*	*-*	*709*
9-10	*Reddish-yellow, fine-medium loose sand*	*No odor/No staining*		*700*
14-15	*Reddish-yellow, fine-medium loose sand*	*No odor/No staining*		*707*
19-20	*Pink-white fine-medium silty loose sand*	*No odor/No staining*	*190*	*290*
24-25	*Pink-white fine-medium silty loose sand*	*No odor/No staining*	*500*	*520*
29-30	*Pink-white fine-medium silty loose sand*	*No odor/No staining*	*200*	*240*

Client:	**EOG**	
Site Name	**Red Hills North Unit #102**	
Boring/Well:	**BH-11 (Pasture Area)**	
GPS	**31.15331 -103.52036**	
Project #:	**212C-MD-00639**	
Total Depth	**15ft**	
Date Installed:	**11/9/2016**	

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Brown Fine-medium silty sand*	*No odor/light stain*	*-*	*707*
2-3	*Brown Fine-medium silty sand*	*No odor/light stain*	*-*	*705*
4-5	*Reddish-brown, Fine-medium loose silty sand*	*No odor/No staining*	*-*	*706*
6-7	*Pink-white, Fine-medium loose silty sand, caliche*	*No odor/No staining*	*240*	*350*
9-10	*Pink-white, Fine-medium loose silty sand, caliche*	*No odor/No staining*	*300*	*546*
14-15	*Olive yellow, fine-medium loose silty sand, w/ caliche*	*No odor/No staining*	*180*	*211*

Client:	EOG
Site Name	Red Hills North Unit #102
Boring/Well:	BH-12 (Pasture Area)
GPS	32.15339 -103.52039
Project #:	212C-MD-00639
Total Depth	15ft
Date Installed:	11/9/2016

DEPTH (Ft)	Lithology/Sample Description	NOTES	Chloride(PPM)	Salinity (ppm)
0-1	*Brown, Fine-medium silty sand*	*No odor/No staining*	*-*	*707*
2-3	*Brown, Fine-medium silty sand*	*No odor/No staining*	*-*	*703*
4-5	*Pink-white, fine-medium loose silty sand, w/ caliche*	*No odor/No staining*	*-*	*210*
6-7	*Pink-white, fine-medium loose silty sand, w/ caliche*	*No odor/No staining*	*-*	*690*
9-10	*Pink-white, fine-medium loose silty sand, w/ caliche*	*No odor/No staining*	*180*	*238*
14-15	*yellowish-brown, fine-medium loose silty sand, caliche*	*No odor/No staining*	*180*	*196*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-1 (Pad Area)**			
GPS	**32.15328 -103.51909**			
Project #:	**212C-MD-00639**			
Total Depth	**15ft**			
Date Installed:	**1/26/2017**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Salinity(PPM)	Chloride (ppm)
0-1	*Brown Med-fine Silty sand*	*Lt. Stain/No Odor*	*710*	
2-3	*Brown Med-fine Silty sand*	*No Stain or odor*	*6.29ppt*	
4-5	*Whitsih-brown med-fine Silty sand*	*No Stain or odor*	*904*	
6-7	*Redish-brown Fine Silty sand*	*No Stain or odor*	*315*	*250*
9-10	*Redish-brown Fine Silty sand*	*No Stain or odor*	*215*	*220*
14-15	*White caliche*	*No Stain or odor*	*294*	

Client:	EOG			
Site Name	Red Hills North Unit #102			
Boring/Well:	BH-2 (Pad Area)			
GPS	32.15330 -103.51922			
Project #:	212C-MD-00639			
Total Depth	15ft			
Date Installed:	1/26/2017			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Salinity(PPM)	Chloride (ppm)
0-1	*Brown med-fine S.S*	*Lt. Stain/No Odor*	*176*	
2-3	*Brown med-fine S.S*	*No Stain or odor*	*1.64ppt*	
4-5	*white caliche, fine sand*	*No Stain or odor*	*290*	*200*
6-7	*white caliche, fine sand*	*No Stain or odor*	*127*	*160*
9-10	*white caliche, fine sand*	*No Stain or odor*	*400*	*190*
14-15	*Redish-brown Fine s.s*	*No Stain or odor*	*200*	*100*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-3 (Pad Area)**			
GPS	**32.15345 -103.51959**			
Project #:	**212C-MD-00639**			
Total Depth	**25ft**			
Date Installed:	**1/26/2017**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Salinity(PPM)	Chloride (ppm)
0-1	*Light brownmed-fine s.s*	*No Stain or odor*	*710*	
2-3	*Brown med-fine s.s*	*No Stain or odor*	*1.59ppt*	
4-5	*Brown med-fine s.s*	*No Stain or odor*	*518*	
6-7	*Brown med-fine s.s*	*No Stain or odor*	*774*	
9-10	*Redish-tan fine sand*	*No Stain or odor*	*107*	
14-15	*Redish-tan fine sand*	*No Stain or odor*	*700*	
19-20	*pale olive green fine silty clay*	*No Stain or odor*	*290*	*160*
24-25	*Redish brown fine silty clay*	*No Stain or odor*	*320*	*180*

Client:	**EOG**			
Site Name	**Red Hills North Unit #102**			
Boring/Well:	**BH-4** (Pad Area)			
GPS	**32.15348 -103.51978**			
Project #:	**212C-MD-00639**			
Total Depth	**20ft**			
Date Installed:	**1/26/2017**			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Salinity(PPM)	Chloride (ppm)
0-1	*Light brown medium sand*	*No Stain/No Odor*	*710*	
2-3	*brown medium sand*	*No Stain or odor*	*740*	
4-5	*brown med-fine sand*	*No Stain or odor*	*230*	
6-7	*tan med-fine sand*	*No Stain or odor*	*700*	
9-10	*Redish brown, med-fine sand*	*No Stain or odor*	*700*	
14-15	*Redish brown, fine sand*	*No Stain or odor*	*233*	*100*
19-20	*brown fine s.s w/ white caliche*	*No Stain or odor*	*2.8*	*120*

Client:	EOG			
Site Name	Red Hills North Unit #102			
Boring/Well:	BH-5 (Pad Area)			
GPS	32.15349 -103.52015			
Project #:	212C-MD-00639			
Total Depth	25ft			
Date Installed:	1/26/2017			

DEPTH (Ft)	Lithology/Sample Description	NOTES	Salinity(PPM)	Chloride (ppm)
0-1	*brown med-fine sand*	*Lt. Stain/light Odor*	*4.44ppt*	
2-3	*brown med-fine sand*	*No Stain or odor*	*2.97ppt*	
4-5	*white-brown caliche, w/fine sand*	*No Stain or odor*	*298*	
6-7	*white-pink caliche, w/fine sand*	*No Stain or odor*	*470*	
9-10	*white-pink caliche, w/fine sand*	*No Stain or odor*	*850*	
14-15	*light brown fine s.s*	*No Stain or odor*	*740*	
19-20	*med-fine silty clay*	*No Stain or odor*	*325*	*120*
24-25	*redish- brown fine silty clay*	*No Stain or odor*	*390*	*220*

Appendix D

Analytical Report 540004

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

EOG-Red Hills North Unit #102

212C-MD-00639

16-NOV-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

16-NOV-16

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **540004**
EOG-Red Hills North Unit #102
Project Address: Lea County NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 540004. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 540004 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 540004

Tetra Tech- Midland, Midland, TX

EOG-Red Hills North Unit #102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-1 (0-1)	S	11-02-16 00:00	0 - 1	540004-001
BH-1 (2-3)	S	11-02-16 00:00	2 - 3	540004-002
BH-1 (4-5)	S	11-02-16 00:00	4 - 5	540004-003
BH-1 (6-7)	S	11-02-16 00:00	6 - 7	540004-004
BH-1 (9-10)	S	11-02-16 00:00	9 - 10	540004-005
BH-1 (14-15)	S	11-02-16 00:00	14 - 15	540004-006
BH-2 (0-1)	S	11-02-16 00:00	0 - 1	540004-007
BH-2 (2-3)	S	11-02-16 00:00	2 - 3	540004-008
BH-2 (4-5)	S	11-02-16 00:00	4 - 5	540004-009
BH-2 (6-7)	S	11-02-16 00:00	6 - 7	540004-010
BH-2 (9-10)	S	11-02-16 00:00	9 - 10	540004-011
BH-2 (14-15)	S	11-02-16 00:00	14 - 15	540004-012
BH-2 (19-20)	S	11-02-16 00:00	19 - 20	540004-013
BH-3 (0-1)	S	11-02-16 00:00	0 - 1	540004-014
BH-3 (2-3)	S	11-02-16 00:00	2 - 3	540004-015
BH-3 (4-5)	S	11-02-16 00:00	4 - 5	540004-016
BH-3 (6-7)	S	11-02-16 00:00	6 - 7	540004-017
BH-3 (9-10)	S	11-02-16 00:00	9 - 10	540004-018
BH-3 (14-15)	S	11-02-16 00:00	14 - 15	540004-019
BH-4 (0-1)	S	11-02-16 00:00	0 - 1	540004-020
BH-4 (2-3)	S	11-02-16 00:00	2 - 3	540004-021
BH-4 (4-5)	S	11-02-16 00:00	4 - 5	540004-022
BH-4 (6-7)	S	11-02-16 00:00	6 - 7	540004-023
BH-4 (9-10)	S	11-02-16 00:00	9 - 10	540004-024
BH-5 (0-1)	S	11-02-16 00:00	0 - 1	540004-025
BH-5 (2-3)	S	11-02-16 00:00	2 - 3	540004-026
BH-5 (4-5)	S	11-02-16 00:00	4 - 5	540004-027
BH-5 (6-7)	S	11-02-16 00:00	6 - 7	540004-028
BH-5 (9-10)	S	11-02-16 00:00	9 - 10	540004-029
BH-6 (0-1)	S	11-02-16 00:00	0 - 0	540004-030
BH-6 (2-3)	S	11-02-16 00:00	2 - 3	540004-031
BH-6 (4-5)	S	11-02-16 00:00	4 - 5	540004-032
BH-6 (6-7)	S	11-02-16 00:00	6 - 7	540004-033
BH-6 (9-10)	S	11-02-16 00:00	9 - 10	540004-034
BH-6 (14-15)	S	11-02-16 00:00	14 - 15	540004-035
BH-7 (0-1)	S	11-02-16 00:00	0 - 1	540004-036
BH-7 (2-3)	S	11-02-16 00:00	2 - 3	540004-037
BH-7 (4-5)	S	11-02-16 00:00	4 - 5	540004-038
BH-7 (6-7)	S	11-02-16 00:00	6 - 7	540004-039
BH-7 (9-10)	S	11-02-16 00:00	9 - 10	540004-040
BH-7 (14-15)	S	11-02-16 00:00	14 - 15	540004-041
BH-7 (19-20)	S	11-02-16 00:00	19 - 20	540004-042
BH-8 (0-1)	S	11-02-16 00:00	0 - 1	540004-044

Sample Cross Reference 540004

Tetra Tech- Midland, Midland, TX

EOG-Red Hills North Unit #102

BH-8 (2-3)	S	11-02-16 00:00	2 - 3	540004-045
BH-8 (4-5)	S	11-02-16 00:00	4 - 5	540004-046
BH-8 (6-7)	S	11-02-16 00:00	6 - 7	540004-047
BH-8 (9-10)	S	11-02-16 00:00	9 - 10	540004-048
BH-8 (14-15)	S	11-02-16 00:00	14 - 15	540004-049
BH-7 (24-25)	S	11-02-16 00:00	24 - 25	Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3003631 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-001		540004-002		540004-003		540004-004		540004-005		540004-006	
	Field Id:	BH-1 (0-1)		BH-1 (2-3)		BH-1 (4-5)		BH-1 (6-7)		BH-1 (9-10)		BH-1 (14-15)	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00	
	Analyzed:	Nov-09-16 16:02		Nov-09-16 16:09		Nov-09-16 16:16		Nov-09-16 16:38		Nov-09-16 16:59		Nov-09-16 17:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		831	5.00	1470	5.00	3100	25.0	1870	25.0	121	25.0	163	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-007		540004-008		540004-009		540004-010		540004-011		540004-012	
	Field Id:	BH-2 (0-1)		BH-2 (2-3)		BH-2 (4-5)		BH-2 (6-7)		BH-2 (9-10)		BH-2 (14-15)	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-09-16 12:00											
	Analyzed:	Nov-09-16 13:45											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00150										
Toluene		ND	0.00200										
Ethylbenzene		ND	0.00200										
m,p-Xylenes		ND	0.00200										
o-Xylene		ND	0.00299										
Total Xylenes		ND	0.00200										
Total BTEX		ND	0.00150										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00		Nov-09-16 11:00	
	Analyzed:	Nov-09-16 17:13		Nov-09-16 17:20		Nov-09-16 17:27		Nov-09-16 17:34		Nov-09-16 17:55		Nov-09-16 18:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		12500	100	4680	50.0	4320	25.0	3750	25.0	1030	5.00	936	5.00
TPH by SW 8015B	***Extracted:***	Nov-08-16 17:00											
	Analyzed:	Nov-09-16 09:40											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-013		540004-014		540004-015		540004-016		540004-017		540004-018	
	Field Id:	BH-2 (19-20)		BH-3 (0-1)		BH-3 (2-3)		BH-3 (4-5)		BH-3 (6-7)		BH-3 (9-10)	
	Depth:	19-20		0-1		2-3		4-5		6-7		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-09-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00	
	Analyzed:	Nov-09-16 18:09		Nov-10-16 12:55		Nov-10-16 13:16		Nov-10-16 13:23		Nov-10-16 13:30		Nov-10-16 13:37	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		344	5.00	4450	25.0	4960	50.0	5310	50.0	4450	25.0	456	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-019		540004-020		540004-021		540004-022		540004-023		540004-024	
	Field Id:	BH-3 (14-15)		BH-4 (0-1)		BH-4 (2-3)		BH-4 (4-5)		BH-4 (6-7)		BH-4 (9-10)	
	Depth:	14-15		0-1		2-3		4-5		6-7		9-10	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
BTEX by EPA 8021B	***Extracted:***			Nov-09-16 12:00									
	Analyzed:			Nov-09-16 16:05									
	Units/RL:			mg/kg	RL								
Benzene				ND	0.00149								
Toluene				ND	0.00198								
Ethylbenzene				ND	0.00198								
m,p-Xylenes				ND	0.00198								
o-Xylene				ND	0.00298								
Total Xylenes				ND	0.00198								
Total BTEX				ND	0.00149								
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00	
	Analyzed:	Nov-10-16 14:12		Nov-10-16 14:20		Nov-10-16 14:27		Nov-10-16 14:34		Nov-10-16 14:41		Nov-10-16 14:48	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		18.3	5.00	2380	25.0	5380	50.0	3510	25.0	76.9	5.00	253	5.00
TPH by SW 8015B	***Extracted:***			Nov-08-16 17:00									
	Analyzed:			Nov-09-16 10:28									
	Units/RL:			mg/kg	RL								
C6-C10 Gasoline Range Hydrocarbons				ND	15.0								
C10-C28 Diesel Range Organics				ND	15.0								
Total TPH				ND	15.0								

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-025		540004-026		540004-027		540004-028		540004-029		540004-030	
	Field Id:	BH-5 (0-1)		BH-5 (2-3)		BH-5 (4-5)		BH-5 (6-7)		BH-5 (9-10)		BH-6 (0-1)	
	Depth:	0-1		2-3		4-5		6-7		9-10		0-0	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-09-16 12:00											
	Analyzed:	Nov-09-16 14:18											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00149										
Toluene		ND	0.00199										
Ethylbenzene		ND	0.00199										
m,p-Xylenes		ND	0.00199										
o-Xylene		ND	0.00298										
Total Xylenes		ND	0.00199										
Total BTEX		ND	0.00149										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00		Nov-10-16 11:00	
	Analyzed:	Nov-11-16 12:33		Nov-11-16 12:40		Nov-11-16 12:47		Nov-11-16 12:54		Nov-11-16 13:01		Nov-11-16 13:08	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2270	25.0	3320	25.0	5390	50.0	268	5.00	173	5.00	115	5.00
TPH by SW 8015B	***Extracted:***	Nov-08-16 17:00											
	Analyzed:	Nov-09-16 10:54											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-031		540004-032		540004-033		540004-034		540004-035		540004-036	
	Field Id:	BH-6 (2-3)		BH-6 (4-5)		BH-6 (6-7)		BH-6 (9-10)		BH-6 (14-15)		BH-7 (0-1)	
	Depth:	2-3		4-5		6-7		9-10		14-15		0-1	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
BTEX by EPA 8021B	***Extracted:***											Nov-09-16 12:00	
	Analyzed:											Nov-09-16 14:34	
	Units/RL:											mg/kg	RL
Benzene												ND	0.00150
Toluene												ND	0.00200
Ethylbenzene												ND	0.00200
m,p-Xylenes												ND	0.00200
o-Xylene												ND	0.00299
Total Xylenes												ND	0.00200
Total BTEX												ND	0.00150
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-10-16 11:00		Nov-10-16 14:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00	
	Analyzed:	Nov-11-16 13:15		Nov-11-16 13:22		Nov-14-16 19:11		Nov-11-16 16:29		Nov-11-16 16:36		Nov-11-16 16:43	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		2460	25.0	2710	50.0	176	5.00	49.3	5.00	12.1	5.00	22.8	5.00
TPH by SW 8015B	***Extracted:***											Nov-08-16 17:00	
	Analyzed:											Nov-09-16 11:45	
	Units/RL:											mg/kg	RL
C6-C10 Gasoline Range Hydrocarbons												ND	15.0
C10-C28 Diesel Range Organics												ND	15.0
Total TPH												ND	15.0

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-037		540004-038		540004-039		540004-040		540004-041		540004-042	
	Field Id:	BH-7 (2-3)		BH-7 (4-5)		BH-7 (6-7)		BH-7 (9-10)		BH-7 (14-15)		BH-7 (19-20)	
	Depth:	2-3		4-5		6-7		9-10		14-15		19-20	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00	
	Analyzed:	Nov-11-16 16:50		Nov-14-16 11:40		Nov-14-16 11:54		Nov-14-16 12:01		Nov-14-16 12:08		Nov-14-16 12:15	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		294	5.00	804	25.0	63.6	5.00	86.3	5.00	267	25.0	255	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540004

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Tue Nov-08-16 04:38 pm
Report Date: 16-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540004-044		540004-045		540004-046		540004-047		540004-048		540004-049	
	Field Id:	BH-8 (0-1)		BH-8 (2-3)		BH-8 (4-5)		BH-8 (6-7)		BH-8 (9-10)		BH-8 (14-15)	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00		Nov-02-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-09-16 12:00											
	Analyzed:	Nov-09-16 14:50											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00149										
Toluene		ND	0.00198										
Ethylbenzene		ND	0.00198										
m,p-Xylenes		ND	0.00198										
o-Xylene		ND	0.00298										
Total Xylenes		ND	0.00198										
Total BTEX		ND	0.00149										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00		Nov-11-16 11:00	
	Analyzed:	Nov-14-16 12:22		Nov-14-16 12:44		Nov-14-16 13:05		Nov-14-16 13:19		Nov-14-16 13:26		Nov-14-16 13:33	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		14700	100	3150	25.0	246	5.00	130	5.00	285	5.00	281	5.00
TPH by SW 8015B	***Extracted:***	Nov-08-16 17:00											
	Analyzed:	Nov-09-16 12:08											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 540004, 540004 **Project ID:** 212C-MD-00639

Lab Batch #: 3003551 **Sample:** 540004-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 09:40

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	112	99.7	112	70-135	
o-Terphenyl	55.0	49.9	110	70-135	

Lab Batch #: 3003551 **Sample:** 540004-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 10:28

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.8	110	70-135	
o-Terphenyl	55.2	49.9	111	70-135	

Lab Batch #: 3003551 **Sample:** 540004-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 10:54

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	110	99.7	110	70-135	
o-Terphenyl	53.5	49.9	107	70-135	

Lab Batch #: 3003551 **Sample:** 540004-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 11:45

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	100	109	70-135	
o-Terphenyl	53.5	50.0	107	70-135	

Lab Batch #: 3003551 **Sample:** 540004-044 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 12:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	113	99.8	113	70-135	
o-Terphenyl	54.0	49.9	108	70-135	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 540004, 540004 **Project ID:** 212C-MD-00639

Lab Batch #: 3003631 **Sample:** 540004-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 13:45

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0325	0.0300	108	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

Lab Batch #: 3003631 **Sample:** 540004-025 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 14:18

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0323	0.0300	108	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 3003631 **Sample:** 540004-036 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 14:34

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0333	0.0300	111	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 3003631 **Sample:** 540004-044 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 14:50

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0336	0.0300	112	80-120	
4-Bromofluorobenzene	0.0309	0.0300	103	80-120	

Lab Batch #: 3003631 **Sample:** 540004-020 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 16:05

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 540004, 540004 **Project ID:** 212C-MD-00639

Lab Batch #: 3003551 **Sample:** 715881-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 20:52

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	100	128	70-135	
o-Terphenyl	64.4	50.0	129	70-135	

Lab Batch #: 3003631 **Sample:** 715942-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/09/16 13:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0318	0.0300	106	80-120	
4-Bromofluorobenzene	0.0253	0.0300	84	80-120	

Lab Batch #: 3003551 **Sample:** 715881-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 21:16

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.0	50.0	128	70-135	

Lab Batch #: 3003631 **Sample:** 715942-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/09/16 12:08

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0310	0.0300	103	80-120	
4-Bromofluorobenzene	0.0271	0.0300	90	80-120	

Lab Batch #: 3003551 **Sample:** 715881-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/08/16 21:40

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	64.8	50.0	130	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 540004, 540004 **Project ID:** 212C-MD-00639

Lab Batch #: 3003631 **Sample:** 715942-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/09/16 12:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0321	0.0300	107	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 3003551 **Sample:** 539784-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/16 22:53

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	128	99.9	128	70-135	
o-Terphenyl	60.8	50.0	122	70-135	

Lab Batch #: 3003631 **Sample:** 540004-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 12:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0319	0.0300	106	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

Lab Batch #: 3003551 **Sample:** 539784-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/08/16 23:17

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.9	129	70-135	
o-Terphenyl	60.6	50.0	121	70-135	

Lab Batch #: 3003631 **Sample:** 540004-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/09/16 12:57

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0335	0.0300	112	80-120	
4-Bromofluorobenzene	0.0316	0.0300	105	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order #: 540004, 540004 **Project ID:** 212C-MD-00639

Analyst: PJB **Date Prepared:** 11/09/2016 **Date Analyzed:** 11/09/2016

Lab Batch ID: 3003631 **Sample:** 715942-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.100	0.0951	95	0.100	0.0966	97	2	70-130	35	
Toluene	<0.00200	0.100	0.0977	98	0.100	0.0995	100	2	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0961	96	0.100	0.0993	99	3	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.199	100	0.200	0.204	102	2	70-135	35	
o-Xylene	<0.00300	0.100	0.0944	94	0.100	0.0988	99	5	71-133	35	

Analyst: MNR **Date Prepared:** 11/09/2016 **Date Analyzed:** 11/09/2016

Lab Batch ID: 3003608 **Sample:** 715909-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	242	97	250	242	97	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order #: 540004, 540004 **Project ID:** 212C-MD-00639

Analyst: MNR **Date Prepared:** 11/10/2016 **Date Analyzed:** 11/10/2016

Lab Batch ID: 3003713 **Sample:** 715944-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	230	92	250	239	96	4	90-110	20	

Analyst: ARM **Date Prepared:** 11/08/2016 **Date Analyzed:** 11/08/2016

Lab Batch ID: 3003551 **Sample:** 715881-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	1000	100	1000	1010	101	1	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	1090	109	1000	1090	109	0	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order # : 540004 **Project ID:** 212C-MD-00639

Lab Batch ID: 3003631 **QC- Sample ID:** 540004-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/09/2016 **Date Prepared:** 11/09/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00149	0.0996	0.0915	92	0.0998	0.0925	93	1	70-130	35	
Toluene	<0.00199	0.0996	0.0924	93	0.0998	0.0960	96	4	70-130	35	
Ethylbenzene	<0.00199	0.0996	0.0918	92	0.0998	0.0930	93	1	71-129	35	
m,p-Xylenes	<0.00199	0.199	0.190	95	0.200	0.194	97	2	70-135	35	
o-Xylene	<0.00299	0.0996	0.0911	91	0.0998	0.0942	94	3	71-133	35	

Lab Batch ID: 3003608 **QC- Sample ID:** 539986-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/09/2016 **Date Prepared:** 11/09/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	308	250	548	96	250	559	100	2	90-110	20	

Lab Batch ID: 3003608 **QC- Sample ID:** 540004-004 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/09/2016 **Date Prepared:** 11/09/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1870	1250	3080	97	1250	3050	94	1	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order # : 540004 **Project ID:** 212C-MD-00639

Lab Batch ID: 3003713 **QC- Sample ID:** 540004-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2016 **Date Prepared:** 11/10/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	4450	1250	5690	99	1250	5610	93	1	90-110	20	

Lab Batch ID: 3003713 **QC- Sample ID:** 540004-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/10/2016 **Date Prepared:** 11/10/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	253	250	492	96	250	508	102	3	90-110	20	

Lab Batch ID: 3003821 **QC- Sample ID:** 540004-033 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2016 **Date Prepared:** 11/11/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	176	250	437	104	250	437	104	0	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order # : 540004 **Project ID:** 212C-MD-00639

Lab Batch ID: 3003821 **QC- Sample ID:** 540004-044 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/14/2016 **Date Prepared:** 11/11/2016 **Analyst:** MNR

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	14700	5000	19900	104	5000	19900	104	0	90-110	20	

Lab Batch ID: 3003551 **QC- Sample ID:** 539784-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/08/2016 **Date Prepared:** 11/08/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	914	91	999	937	94	2	70-135	35	
C10-C28 Diesel Range Organics	<15.0	999	983	98	999	1010	101	3	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

5400004

PAGE: OF: 5

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00639

PROJECT NAME: Red Hills North unit #2 Lea Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11-2-16		S		X	BH-1 (0-1)	1	2			X	X	X	X										X				
						BH-1 (2-3)	1	2			X	X												X				
						BH-1 (4-5)	1	2			X	X												X				
						BH-1 (6-7)	1	2			X	X												X				
						BH-1 (9-10)	1	2			X	X												X				
						BH-1 (14-15)	1	2			X	X												X				
						BH-2 (0-1)	1	2			X	X	X	X										X				
						BH-2 (2-3)	1	2			X	X												X				
						BH-2 (4-5)	1	2			X	X												X				
	V		V		V	BH-2 (6-7)	1	2			X	X												X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 11-2-16 Time: 1638 — RECEIVED BY: (Signature) — Date: 11-2-16 Time: 1638

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

SAMPLED BY: (Print & Initial) Mike Carmona — Date: 11-2-16 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS — AIRBILL #: — OTHER:

RECEIVING LABORATORY: Xenco
ADDRESS: Midland CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature) DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10mg/kg or Total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting

Temp: IR ID:R-8
CF:+ 0.1 2.6

Final 1.000

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5400004

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212c-md-00039

PROJECT NAME: Red Hills North unit #2 Lea Co NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
	11-2-16		S		X	BH - 2 (9-10)	1	N			X	X
						BH - 2 (14-15)	1	N			X	X
						BH - 2 (19-20)	1	N			X	X
						BH 3 (0-1)	1	N			X	X
						BH 3 (2-3)	1	N			X	X
						BH 3 (4-5)	1	N			X	X
						BH 3 (6-7)	1	N			X	X
						BH 3 (9-10)	1	N			X	X
						BH 3 (14-15)	1	N			X	X
						BH 4 (0-1)	1	N			X	X

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X											X				
												X				
												X				
												X				
												X				
												X				
												X				
												X				
												X				
X	X											X				

RELINQUISHED BY: (Signature) — Date: 11-2-16 Time: 1438
RECEIVED BY: (Signature) — Date: 11-2-16 Time: 1638
SAMPLED BY: (Print & Initial) — Date: 11-2-16 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accoui

Temp: IR ID:R-8
CF:+ 0.1 2.6
Corrected

Final 1.000

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540004

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212c-md-00659

PROJECT NAME: Red Hills North Unit #2 Lea Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	EPH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlorides	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11-2-16		S		X	BH - 4 (2-3)	1	N			X	X													X			
						BH - 4 (4-5)	1	N			X	X													X			
						BH - 4 (6-7)	1	N			X	X													X			
						BH - 4 (9-10)	1	N			X	X													X			
						BH - 5 (0-1)	1	N			X	X	X												X			
						BH - 5 (2-3)	1	N			X	X													X			
						BH - 5 (4-5)	1	N			X	X													X			
						BH - 5 (6-7)	1	N			X	X													X			
						BH - 5 (9-10)	1	N			X	X													X			
						BH - 6 (0-1)	1	N			X	X	MM												X			

RELINQUISHED BY: (Signature) Date: 11-2-16 Time: 16:35
RECEIVED BY: (Signature) Date: 11-2-16 Time: 16:35
SAMPLED BY: (Print & Initial) Date: 11-2-16 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting

Temp: IR ID:R-8
CF:+ 0.1 2.6 2.7

Final 1.000

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540004

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212c-MD-00639

PROJECT NAME: Red Hills North Unit #2 Lea Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11-8-16		S		X	BH-6 (2-3)	1	N			X	X												X				
						BH-6 (4-5)	1	N			X	X												X				
						BH-6 (6-7)	1	N			X	X												X				
						BH-6 (9-10)	1	N			X	X												X				
						BH-6 (14-15)	1	N			X	X												X				
						BH-7 (0-1)	1	N			X	X	X	X										X				
						BH-7 (2-3)	1	N			X	X												X				
						BH-7 (4-5)	1	N			X	X												X				
						BH-7 (6-7)	1	N			X	X												X				
						BH-7 9-10	1	N			X	X												X				

RELINQUISHED BY: (Signature) — Date: 11-8-16 Time: 11:38
RECEIVED BY: (Signature) — Date: 11-8-16 Time: 11:38
SAMPLED BY: (Print & Initial) Matthew McDaniel — Date: 11-8-16 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Xenco
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10 mg/kg or total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accou

Temp: IR ID:R-8
CF:+ 0.1 °C
Corrected

Final 1.000

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540004

Analysis Request of Chain of Custody Record

PAGE: 5 OF: 5

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212c-MD-00639

PROJECT NAME: Red Hills Unit #2 Lea Co, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11-2-16		S		X	BH-7 (14-15)	1	N			X	X														X				
						BH-7 (19-20)	1	N			X	X														X				
						BH-7 (24-25)	1	N			X	X														Hold				
						BH-8 (0-1)	1	N			X	X	X	X												X				
						BH-8 (2-3)	1	N			X	X														X				
						BH-8 (4-5)	1	N			X	X														X				
						BH-8 (6-7)	1	N			X	X														X				
						BH-8 (9-10)	1	N			X	X														X				
						BH-8 (14-15)	1	N			X	X														X				
							FF																							

RELINQUISHED BY: (Signature)	Date: 11-8-16 Time: 1638	RECEIVED BY: (Signature)	Date: 11-8-16 Time: 1638
SAMPLED BY: (Print & Initial)	Date: 11-8-16 Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez	Results by:		
RECEIVING LABORATORY: Xenco ADDRESS: CITY: Midland STATE: TX ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS: Run deeper samples if TPH exceeds 5,000 mg/kg. Run deeper samples if Benzene exceeds 10 mg/kg or Total BTEX exceeds 50 mg/kg

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accountin

Temp: IR ID:R-8
CF:+ 0.1 2.6
Corrected Temp: 2.7

Final 1.000

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XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 11/08/2016 04:38:00 PM

Work Order #: 540004

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.7
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 11/09/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 11/09/2016

Analytical Report 540172

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

EOG - Red Hills North Unit #102

212C-MD-00639

17-NOV-16

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

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17-NOV-16

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **540172**
EOG - Red Hills North Unit #102
Project Address: Lea Co, NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 540172. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 540172 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 540172

Tetra Tech- Midland, Midland, TX

EOG - Red Hills North Unit #102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH-9 0-1	S	11-09-16 00:00	0 - 1	540172-001
BH-9 2-3	S	11-09-16 00:00	2 - 3	540172-002
BH-9 4-5	S	11-09-16 00:00	4 - 5	540172-003
BH-9 6-7	S	11-09-16 00:00	6 - 7	540172-004
BH-9 9-10	S	11-09-16 00:00	9 - 10	540172-005
BH-9 14-15	S	11-09-16 00:00	14 - 15	540172-006
BH-10 0-1	S	11-09-16 00:00	0 - 1	540172-007
BH-10 2-3	S	11-09-16 00:00	2 - 3	540172-008
BH-10 4-5	S	11-09-16 00:00	4 - 5	540172-009
BH-10 6-7	S	11-09-16 00:00	6 - 7	540172-010
BH-10 9-10	S	11-09-16 00:00	9 - 10	540172-011
BH-10 14-15	S	11-09-16 00:00	14 - 15	540172-012
BH-10 19-20	S	11-09-16 00:00	19 - 20	540172-013
BH-10 24-25	S	11-09-16 00:00	24 - 25	540172-014
BH-10 29-30	S	11-09-16 00:00	29 - 30	540172-015
BH-11 0-1	S	11-09-16 00:00	0 - 1	540172-016
BH-11 2-3	S	11-09-16 00:00	2 - 3	540172-017
BH-11 4-5	S	11-09-16 00:00	4 - 5	540172-018
BH-11 6-7	S	11-09-16 00:00	6 - 7	540172-019
BH-11 9-10	S	11-09-16 00:00	9 - 10	540172-020
BH-11 14-15	S	11-09-16 00:00	14 - 15	540172-021
BH-12 0-1	S	11-09-16 00:00	0 - 1	540172-022
BH-12 2-3	S	11-09-16 00:00	2 - 3	540172-023
BH-12 4-5	S	11-09-16 00:00	4 - 5	540172-024
BH-12 6-7	S	11-09-16 00:00	6 - 7	540172-025
BH-12 9-10	S	11-09-16 00:00	9 - 10	540172-026
BH-12 14-15	S	11-09-16 00:00	14 - 15	540172-027

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3003809 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Certificate of Analysis Summary 540172

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Thu Nov-10-16 04:09 pm
Report Date: 17-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540172-001		540172-002		540172-003		540172-004		540172-005		540172-006	
	Field Id:	BH-9 0-1		BH-9 2-3		BH-9 4-5		BH-9 6-7		BH-9 9-10		BH-9 14-15	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47	
	Analyzed:	Nov-16-16 14:45		Nov-16-16 15:06		Nov-16-16 15:13		Nov-16-16 15:34		Nov-16-16 15:48		Nov-16-16 15:55	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		302	5.00	534	5.00	209	50.0	128	5.00	137	5.00	156	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540172

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Thu Nov-10-16 04:09 pm
Report Date: 17-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540172-007		540172-008		540172-009		540172-010		540172-011		540172-012	
	Field Id:	BH-10 0-1		BH-10 2-3		BH-10 4-5		BH-10 6-7		BH-10 9-10		BH-10 14-15	
	Depth:	0-1		2-3		4-5		6-7		9-10		14-15	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Nov-11-16 16:00											
	Analyzed:	Nov-11-16 19:24											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00149										
Toluene		ND	0.00199										
Ethylbenzene		ND	0.00199										
m,p-Xylenes		ND	0.00199										
o-Xylene		ND	0.00298										
Total Xylenes		ND	0.00199										
Total BTEX		ND	0.00149										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47	
	Analyzed:	Nov-16-16 16:02		Nov-16-16 16:09		Nov-16-16 16:16		Nov-16-16 16:23		Nov-16-16 16:30		Nov-16-16 17:06	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1700	5.00	1720	5.00	101	5.00	422	5.00	1420	5.00	1540	5.00
TPH by SW 8015B	***Extracted:***	Nov-15-16 11:00											
	Analyzed:	Nov-15-16 14:19											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540172

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Thu Nov-10-16 04:09 pm
Report Date: 17-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540172-013		540172-014		540172-015		540172-016		540172-017		540172-018	
	Field Id:	BH-10 19-20		BH-10 24-25		BH-10 29-30		BH-11 0-1		BH-11 2-3		BH-11 4-5	
	Depth:	19-20		24-25		29-30		0-1		2-3		4-5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00	
BTEX by EPA 8021B	***Extracted:***							Nov-11-16 16:00					
	Analyzed:							Nov-11-16 19:41					
	Units/RL:							mg/kg	RL				
Benzene								ND	0.00150				
Toluene								ND	0.00200				
Ethylbenzene								ND	0.00200				
m,p-Xylenes								ND	0.00200				
o-Xylene								ND	0.00300				
Total Xylenes								ND	0.00200				
Total BTEX								ND	0.00150				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 10:47	
	Analyzed:	Nov-16-16 17:13		Nov-16-16 17:20		Nov-16-16 17:34		Nov-16-16 17:41		Nov-16-16 17:48		Nov-16-16 18:09	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		132	5.00	409	5.00	146	5.00	3280	25.0	3250	25.0	2890	25.0
TPH by SW 8015B	***Extracted:***							Nov-15-16 11:00					
	Analyzed:							Nov-15-16 15:32					
	Units/RL:							mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons								ND	14.9				
C10-C28 Diesel Range Organics								ND	14.9				
Total TPH								ND	14.9				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540172

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Thu Nov-10-16 04:09 pm
Report Date: 17-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	540172-019		540172-020		540172-021		540172-022		540172-023		540172-024	
	Field Id:	BH-11 6-7		BH-11 9-10		BH-11 14-15		BH-12 0-1		BH-12 2-3		BH-12 4-5	
	Depth:	6-7		9-10		14-15		0-1		2-3		4-5	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-16-16 10:47		Nov-16-16 10:47		Nov-16-16 12:59		Nov-16-16 12:59		Nov-16-16 12:59		Nov-16-16 12:59	
	Analyzed:	Nov-16-16 18:23		Nov-16-16 18:30		Nov-17-16 09:43		Nov-17-16 10:04		Nov-17-16 11:26		Nov-17-16 10:18	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		364	5.00	386	5.00	107	5.00	3010	25.0	2780	25.0	163	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 540172

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea Co, NM

Date Received in Lab: Thu Nov-10-16 04:09 pm
Report Date: 17-NOV-16
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	540172-025		540172-026		540172-027			
	Field Id:	BH-12 6-7		BH-12 9-10		BH-12 14-15			
	Depth:	6-7		9-10		14-15			
	Matrix:	SOIL		SOIL		SOIL			
	Sampled:	Nov-09-16 00:00		Nov-09-16 00:00		Nov-09-16 00:00			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Nov-16-16 12:59		Nov-16-16 12:59		Nov-16-16 12:59			
	Analyzed:	Nov-17-16 10:25		Nov-16-16 20:16		Nov-16-16 20:23			
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL		
Chloride		54.4	5.00	170	5.00	79.7	5.00		

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Orders : 540172,

Project ID: 212C-MD-00639

Lab Batch #: 3003809 **Sample:** 540172-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/11/16 19:24

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0292	0.0300	97	80-120	
4-Bromofluorobenzene	0.0290	0.0300	97	80-120	

Lab Batch #: 3003809 **Sample:** 540172-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/11/16 19:41

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0279	0.0300	93	80-120	

Lab Batch #: 3003941 **Sample:** 540172-007 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/16 14:19

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.2	99.8	99	70-135	
o-Terphenyl	53.0	49.9	106	70-135	

Lab Batch #: 3003941 **Sample:** 540172-016 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/16 15:32

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	99.6	99	70-135	
o-Terphenyl	52.8	49.8	106	70-135	

Lab Batch #: 3003809 **Sample:** 716076-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/11/16 17:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0290	0.0300	97	80-120	
4-Bromofluorobenzene	0.0258	0.0300	86	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Orders : 540172,

Project ID: 212C-MD-00639

Lab Batch #: 3003941 **Sample:** 716126-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/16 13:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	61.5	50.0	123	70-135	

Lab Batch #: 3003809 **Sample:** 716076-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/11/16 16:11

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0311	0.0300	104	80-120	

Lab Batch #: 3003941 **Sample:** 716126-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/16 13:31

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	100	124	70-135	
o-Terphenyl	60.7	50.0	121	70-135	

Lab Batch #: 3003809 **Sample:** 716076-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/11/16 16:27

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0325	0.0300	108	80-120	

Lab Batch #: 3003941 **Sample:** 716126-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 11/15/16 13:55

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	61.5	50.0	123	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Orders : 540172,

Project ID: 212C-MD-00639

Lab Batch #: 3003809 **Sample:** 540170-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/11/16 16:43

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0324	0.0300	108	80-120	
4-Bromofluorobenzene	0.0329	0.0300	110	80-120	

Lab Batch #: 3003941 **Sample:** 540172-007 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/16 14:43

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	124	99.9	124	70-135	
o-Terphenyl	61.0	50.0	122	70-135	

Lab Batch #: 3003809 **Sample:** 540170-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/11/16 16:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0359	0.0300	120	80-120	
4-Bromofluorobenzene	0.0332	0.0300	111	80-120	

Lab Batch #: 3003941 **Sample:** 540172-007 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 11/15/16 15:08

SURROGATE RECOVERY STUDY

TPH by SW 8015B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	99.8	123	70-135	
o-Terphenyl	59.8	49.9	120	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Order #: 540172 **Project ID:** 212C-MD-00639

Analyst: PJB **Date Prepared:** 11/11/2016 **Date Analyzed:** 11/11/2016

Lab Batch ID: 3003809 **Sample:** 716076-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.100	0.0962	96	0.100	0.0907	91	6	70-130	35	
Toluene	<0.00200	0.100	0.0983	98	0.100	0.0915	92	7	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0980	98	0.100	0.0918	92	7	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.202	101	0.200	0.190	95	6	70-135	35	
o-Xylene	<0.00300	0.100	0.0989	99	0.100	0.0948	95	4	71-133	35	

Analyst: SLU **Date Prepared:** 11/16/2016 **Date Analyzed:** 11/16/2016

Lab Batch ID: 3004060 **Sample:** 716163-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	259	104	250	242	97	7	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Order #: 540172 **Project ID:** 212C-MD-00639

Analyst: SLU **Date Prepared:** 11/16/2016 **Date Analyzed:** 11/17/2016

Lab Batch ID: 3004056 **Sample:** 716177-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<5.00	250	265	106	250	259	104	2	90-110	20	

Analyst: ARM **Date Prepared:** 11/15/2016 **Date Analyzed:** 11/15/2016

Lab Batch ID: 3003941 **Sample:** 716126-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	952	95	1000	982	98	3	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	976	98	1000	964	96	1	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Order # : 540172 **Project ID:** 212C-MD-00639

Lab Batch ID: 3003809 **QC- Sample ID:** 540170-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/11/2016 **Date Prepared:** 11/11/2016 **Analyst:** PJB

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.0998	0.0858	86	0.100	0.0864	86	1	70-130	35	
Toluene	<0.00200	0.0998	0.0898	90	0.100	0.0883	88	2	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0914	92	0.100	0.0878	88	4	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.189	95	0.200	0.184	92	3	70-135	35	
o-Xylene	<0.00299	0.0998	0.0920	92	0.100	0.0909	91	1	71-133	35	

Lab Batch ID: 3004056 **QC- Sample ID:** 540433-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/16/2016 **Date Prepared:** 11/16/2016 **Analyst:** SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	3840	2500	6490	106	2500	6310	99	3	90-110	20	

Lab Batch ID: 3004060 **QC- Sample ID:** 540172-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/16/2016 **Date Prepared:** 11/16/2016 **Analyst:** SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	302	250	555	101	250	570	107	3	90-110	20	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: EOG - Red Hills North Unit #102

Work Order # : 540172 **Project ID:** 212C-MD-00639

Lab Batch ID: 3004060 **QC- Sample ID:** 540172-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/16/2016 **Date Prepared:** 11/16/2016 **Analyst:** SLU

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	1420	250	1670	100	250	1680	104	1	90-110	20	

Lab Batch ID: 3003941 **QC- Sample ID:** 540172-007 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 11/15/2016 **Date Prepared:** 11/15/2016 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by SW 8015B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	945	95	998	937	94	1	70-135	35	
C10-C28 Diesel Range Organics	<15.0	999	957	96	998	946	95	1	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

541072

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 4

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: Tetra Tech

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: Red Hills North Unit #102

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11.9		S		X	BH-9 0-1	1				X	X													X				
	11.9		S		X	BH-9 2-3	1				X	X													X				
	11.9		S		X	BH-9 4-5	1				X	X													X				
	11.9		S		X	BH-9 6-7	1				X	X													X				
	11.9		S		X	BH-9 9-10	1				X	X													X				
	11.9		S		X	BH-9 14-15	1				X	X													X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Clint Merritt Date: Time:

RELINQUISHED BY: (Signature) Date: 10.10.16 Time: 16:09

RECEIVED BY: (Signature) Date: 10.10.16 Time: 1609

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE: RECEIVED BY: (Signature) DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink cop py.

Temp: IR ID:R-8
CF:+ 0.1 2.4
Corrected Temp: 2.5

Final 1.000

540172

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 4

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: Red Hills North Unit #102

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	ANALYSIS REQUEST: BTEX 8021B	TRH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11.9		S		X	BH-10 0-1	1				X	X	X	X											X				
	11.9		S		X	BH-10 2-3	1				X	X													X				
	11.9		S		X	BH-10 4-5	1				X	X													X				
	11.9		S		X	BH-10 6-7	1				X	X													X				
	11.9		S		X	BH-10 9-10	1				X	X													X				
	11.9		S		X	BH-10 14-15	1				X	X													X				
	11.9		S		X	BH-10 19-20	1				X	X													X				
	11.9		S		X	BH-10 24-25	1				X	X													X				
	11.9		S		X	BH-10 29-30	1				X	X													X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Clint Merritt Date: Time:

RELINQUISHED BY: (Signature) Date: 11.10.16 Time: 16:09

RECEIVED BY: (Signature) Date: 11.10.16 Time: 1609

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Ac

Temp: IR ID:R-8
CF:+ 0.1 2.4
Corrected Temp: 2.5

Final 1.000

540172

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 4

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: Red Hills North Unit #102

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11.9		S		X	BH-11 0-1	1				X	X	X	X											X				
	11.9		S		X	BH-11 2-3	1				X	X													X				
	11.9		S		X	BH-11 4-5	1				X	X													X				
	11.9		S		X	BH-11 6-7	1				X	X													X				
	11.9		S		X	BH-11 9-10	1				X	X													X				
	11.9		S		X	BH-11 14-15	1				X	X													X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Clint Merritt Date: Time:

RELINQUISHED BY: (Signature) Date: 11.10.16 Time: 16:05

RECEIVED BY: (Signature) Date: 11/10/16 Time: 1609

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - A

Temp: IR ID:R-8
CF:+ 0.1 2.4
Corrected Temp: 2.5

Final 1.000

Page 21 of 23

540172

Analysis Request of Chain of Custody Record

PAGE: 4 OF: 4

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.:

PROJECT NAME: Red Hills North Unit #102

LAB I.D. NUMBER	DATE 2016	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	11.9		S		X	BH-12 0-1	1				X	X												X				
	11.9		S		X	BH-12 2-3	1				X	X												X				
	11.9		S		X	BH-12 4-5	1				X	X												X				
	11.9		S		X	BH-12 6-7	1				X	X												X				
	11.9		S		X	BH-12 9-10	1				X	X												X				
	11.9		S		X	BH-12 14-15	1				X	X												X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) Clint Merritt Date: Time:

RELINQUISHED BY: (Signature) Date: 11.10.16 Time: 16:09

RECEIVED BY: (Signature) Date: Time: 1609

SAMPLE SHIPPED BY: (Circle)
FEDEX BUS
HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY:
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:

RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - A

Temp: IR ID:R-8
CF:+ 0.1 2.4
Corrected Temp: 2.5

Final 1.000

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 11/10/2016 04:09:00 PM

Work Order #: 540172

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	2.5
#2 *Shipping container in good condition?	**N/A**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 11/11/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 11/11/2016

Analytical Report 545114

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

EOG-Red Hills North Unit #102

212C-MD-00639

06-FEB-17

Collected By: Client

1211 W. Florida Ave, Midland TX 79701

Xenco-Houston (EPA Lab code: TX00122):
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)
Xenco-San Antonio: Texas (T104704534)
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)

06-FEB-17

Project Manager: **Ike Tavarez**
Tetra Tech- Midland
4000 N. Big Spring Suite 401
Midland, TX 79705

Reference: XENCO Report No(s): **545114**
EOG-Red Hills North Unit #102
Project Address: Lea County NM

Ike Tavarez:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 545114. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 545114 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

Kelsey Brooks
Project Manager

Sample Cross Reference 545114

Tetra Tech- Midland, Midland, TX

EOG-Red Hills North Unit #102

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
BH #1 (0-1)	S	01-27-17 00:00	0 - 1 ft	545114-001
BH #1 (2-3)	S	01-27-17 00:00	2 - 3 ft	545114-002
BH #1 (4-5)	S	01-27-17 00:00	4 - 5 ft	545114-003
BH #1 (6-7)	S	01-27-17 00:00	6 - 7 ft	545114-004
BH #1 (9-10)	S	01-27-17 00:00	9 - 10 ft	545114-005
BH #2 (0-1)	S	01-27-17 00:00	0 - 1 ft	545114-007
BH #2 (2-3)	S	01-27-17 00:00	2 - 3 ft	545114-008
BH #2 (4-5)	S	01-27-17 00:00	4 - 5 ft	545114-009
BH #2 (6-7)	S	01-27-17 00:00	6 - 7 ft	545114-010
BH #3 (0-1)	S	01-27-17 00:00	0 - 1 ft	545114-013
BH #3 (2-3)	S	01-27-17 00:00	2 - 3 ft	545114-014
BH #3 (4-5)	S	01-27-17 00:00	4 - 5 ft	545114-015
BH #3 (6-7)	S	01-27-17 00:00	6 - 7 ft	545114-016
BH #3 (9-10)	S	01-27-17 00:00	9 - 10 ft	545114-017
BH #3 (14-15)	S	01-27-17 00:00	14 - 15 ft	545114-018
BH #3 (19-20)	S	01-27-17 00:00	19 - 20 ft	545114-019
BH #3 (24-25)	S	01-27-17 00:00	24 - 25 ft	545114-020
BH #4 (0-1)	S	01-27-17 00:00	0 - 1 ft	545114-021
BH #4 (2-3)	S	01-27-17 00:00	2 - 3 ft	545114-022
BH #4 (4-5)	S	01-27-17 00:00	4 - 5 ft	545114-023
BH #4 (6-7)	S	01-27-17 00:00	6 - 7 ft	545114-024
BH #4 (9-10)	S	01-27-17 00:00	9 - 10 ft	545114-025
BH #4 (14-15)	S	01-27-17 00:00	14 - 15 ft	545114-026
BH #4 (19-20)	S	01-27-17 00:00	19 - 20 ft	545114-027
BH #5 (0-1)	S	01-27-17 00:00	0 - 1 ft	545114-028
BH #5 (2-3)	S	01-27-17 00:00	2 - 3 ft	545114-029
BH #5 (4-5)	S	01-27-17 00:00	4 - 5 ft	545114-030
BH #5 (6-7)	S	01-27-17 00:00	6 - 7 ft	545114-031
BH #5 (9-10)	S	01-27-17 00:00	9 - 10 ft	545114-032
BH #5 (14-15)	S	01-27-17 00:00	14 - 15 ft	545114-033
BH #5 (19-20)	S	01-27-17 00:00	19 - 20 ft	545114-034
BH #5 (24-25)	S	01-27-17 00:00	24 - 25 ft	545114-035
BH #1 (14-15)	S	01-27-17 00:00	14 - 15 ft	Not Analyzed
BH #2 (9-10)	S	01-27-17 00:00	9 - 10 ft	Not Analyzed
BH #2 (14-15)	S	01-27-17 00:00	14 - 15 ft	Not Analyzed

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3008851 BTEX by EPA 8021B
Soil samples were not received in Terracore kits and therefore were prepared by method 5030.

Batch: LBA-3009410 Inorganic Anions by EPA 300/300.1
Lab Sample ID 545114-014 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered below QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 545114-001, -002, -003, -004, -005, -007, -008, -009, -010, -013, -014, -015, -016, -017, -018, -019, -020, -021, -022, -023.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Batch: LBA-3009420 Inorganic Anions by EPA 300/300.1
Lab Sample ID 545114-034 was randomly selected for Matrix Spike/Matrix Spike Duplicate (MS/MSD). Chloride recovered above QC limits in the Matrix Spike and Matrix Spike Duplicate. Outlier/s are due to possible matrix interference. Samples in the analytical batch are: 545114-024, -025, -026, -027, -028, -029, -030, -031, -032, -033, -034, -035.
The Laboratory Control Sample for Chloride is within laboratory Control Limits, therefore the data was accepted.

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	545114-001		545114-002		545114-003		545114-004		545114-005		545114-007	
	Field Id:	BH #1 (0-1)		BH #1 (2-3)		BH #1 (4-5)		BH #1 (6-7)		BH #1 (9-10)		BH #2 (0-1)	
	Depth:	0-1 ft		2-3 ft		4-5 ft		6-7 ft		9-10 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Jan-30-17 09:00											
	Analyzed:	Jan-30-17 10:26											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00149										
Toluene		ND	0.00199										
Ethylbenzene		ND	0.00199										
m,p-Xylenes		ND	0.00199										
o-Xylene		ND	0.00298										
Total Xylenes		ND	0.00199										
Total BTEX		ND	0.00149										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12	
	Analyzed:	Feb-03-17 14:25		Feb-03-17 14:47		Feb-03-17 15:28		Feb-03-17 15:35		Feb-03-17 15:43		Feb-03-17 16:05	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		9550	50.0	7550	49.0	1480	25.0	207	4.99	132	5.00	37.8	4.83
TPH By SW8015 Mod	***Extracted:***	Jan-28-17 13:00											
	Analyzed:	Jan-28-17 20:54											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
C28-C35 Oil Range Hydrocarbons		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	545114-008		545114-009		545114-010		545114-013		545114-014		545114-015	
	Field Id:	BH #2 (2-3)		BH #2 (4-5)		BH #2 (6-7)		BH #3 (0-1)		BH #3 (2-3)		BH #3 (4-5)	
	Depth:	2-3 ft		4-5 ft		6-7 ft		0-1 ft		2-3 ft		4-5 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00	
BTEX by EPA 8021B	***Extracted:***							Jan-30-17 09:00					
	Analyzed:							Jan-30-17 10:42					
	Units/RL:							mg/kg	RL				
Benzene								ND	0.00151				
Toluene								ND	0.00201				
Ethylbenzene								ND	0.00201				
m,p-Xylenes								ND	0.00201				
o-Xylene								ND	0.00301				
Total Xylenes								ND	0.00201				
Total BTEX								ND	0.00151				
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12	
	Analyzed:	Feb-03-17 16:12		Feb-03-17 16:19		Feb-03-17 16:27		Feb-03-17 16:34		Feb-03-17 16:41		Feb-03-17 17:03	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		1430	25.0	164	4.98	18.3	5.00	873	25.0	844	25.0	232	4.90
TPH By SW8015 Mod	***Extracted:***							Jan-28-17 13:00					
	Analyzed:							Jan-28-17 21:16					
	Units/RL:							mg/kg	RL				
C6-C10 Gasoline Range Hydrocarbons								ND	15.0				
C10-C28 Diesel Range Organics								ND	15.0				
C28-C35 Oil Range Hydrocarbons								ND	15.0				
Total TPH								ND	15.0				

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	545114-016		545114-017		545114-018		545114-019		545114-020		545114-021	
	Field Id:	BH #3 (6-7)		BH #3 (9-10)		BH #3 (14-15)		BH #3 (19-20)		BH #3 (24-25)		BH #4 (0-1)	
	Depth:	6-7 ft		9-10 ft		14-15 ft		19-20 ft		24-25 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:12	
	Analyzed:	Feb-03-17 17:11		Feb-03-17 17:33		Feb-03-17 17:40		Feb-03-17 17:48		Feb-03-17 17:55		Feb-03-17 18:02	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		381	25.0	29.9	24.9	ND	25.0	32.7	4.99	61.9	4.90	5360	48.9

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	545114-022		545114-023		545114-024		545114-025		545114-026		545114-027	
	Field Id:	BH #4 (2-3)		BH #4 (4-5)		BH #4 (6-7)		BH #4 (9-10)		BH #4 (14-15)		BH #4 (19-20)	
	Depth:	2-3 ft		4-5 ft		6-7 ft		9-10 ft		14-15 ft		19-20 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00	
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:12		Feb-01-17 08:12		Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23	
	Analyzed:	Feb-03-17 18:10		Feb-03-17 18:17		Feb-03-17 19:01		Feb-03-17 19:23		Feb-03-17 19:30		Feb-03-17 19:38	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5860	49.0	165	5.00	ND	24.8	36.1	4.99	29.6	4.93	27.9	5.00

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	545114-028		545114-029		545114-030		545114-031		545114-032		545114-033	
	Field Id:	BH #5 (0-1)		BH #5 (2-3)		BH #5 (4-5)		BH #5 (6-7)		BH #5 (9-10)		BH #5 (14-15)	
	Depth:	0-1 ft		2-3 ft		4-5 ft		6-7 ft		9-10 ft		14-15 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00		Jan-27-17 00:00	
BTEX by EPA 8021B	***Extracted:***	Jan-30-17 09:00											
	Analyzed:	Jan-30-17 11:31											
	Units/RL:	mg/kg	RL										
Benzene		ND	0.00150										
Toluene		ND	0.00200										
Ethylbenzene		ND	0.00200										
m,p-Xylenes		ND	0.00200										
o-Xylene		ND	0.00299										
Total Xylenes		ND	0.00200										
Total BTEX		ND	0.00150										
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23		Feb-01-17 08:23	
	Analyzed:	Feb-03-17 19:45		Feb-03-17 20:07		Feb-03-17 20:14		Feb-03-17 20:22		Feb-03-17 20:29		Feb-03-17 20:36	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		4220	24.3	3100	24.7	534	4.95	323	4.98	324	25.0	369	5.00
TPH By SW8015 Mod	***Extracted:***	Jan-28-17 13:00											
	Analyzed:	Jan-28-17 21:39											
	Units/RL:	mg/kg	RL										
C6-C10 Gasoline Range Hydrocarbons		ND	15.0										
C10-C28 Diesel Range Organics		ND	15.0										
C28-C35 Oil Range Hydrocarbons		ND	15.0										
Total TPH		ND	15.0										

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 545114

Tetra Tech- Midland, Midland, TX

Project Name: EOG-Red Hills North Unit #102

Project Id: 212C-MD-00639
Contact: Ike Tavarez
Project Location: Lea County NM

Date Received in Lab: Fri Jan-27-17 11:14 am
Report Date: 06-FEB-17
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	545114-034		545114-035			
	Field Id:	BH #5 (19-20)		BH #5 (24-25)			
	Depth:	19-20 ft		24-25 ft			
	Matrix:	SOIL		SOIL			
	Sampled:	Jan-27-17 00:00		Jan-27-17 00:00			
Inorganic Anions by EPA 300/300.1	***Extracted:***	Feb-01-17 08:23		Feb-01-17 08:23			
	Analyzed:	Feb-03-17 20:44		Feb-03-17 21:06			
	Units/RL:	mg/kg	RL	mg/kg	RL		
Chloride		45.8	4.86	346	5.00		

Kelsey Brooks
Project Manager

Flagging Criteria

X In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.

B A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.

D The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.

E The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.

F RPD exceeded lab control limits.

J The target analyte was positively identified below the quantitation limit and above the detection limit.

U Analyte was not detected.

L The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.

H The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.

K Sample analyzed outside of recommended hold time.

JN A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

** Surrogate recovered outside laboratory control limit.

BRL Below Reporting Limit.

RL Reporting Limit

MDL Method Detection Limit **SDL** Sample Detection Limit **LOD** Limit of Detection

PQL Practical Quantitation Limit **MQL** Method Quantitation Limit **LOQ** Limit of Quantitation

DL Method Detection Limit

NC Non-Calculable

+ NELAC certification not offered for this compound.

***** (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

	Phone	Fax
4147 Greenbriar Dr, Stafford, TX 77477	(281) 240-4200	(281) 240-4280
9701 Harry Hines Blvd , Dallas, TX 75220	(214) 902 0300	(214) 351-9139
5332 Blackberry Drive, San Antonio TX 78238	(210) 509-3334	(210) 509-3335
1211 W Florida Ave, Midland, TX 79701	(432) 563-1800	(432) 563-1713
2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282	(602) 437-0330	

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 545114,

Project ID: 212C-MD-00639

Lab Batch #: 3008771 **Sample:** 545114-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/28/17 20:54

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	106	99.7	106	70-135	
o-Terphenyl	57.8	49.9	116	70-135	

Lab Batch #: 3008771 **Sample:** 545114-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/28/17 21:16

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.4	99.8	91	70-135	
o-Terphenyl	48.8	49.9	98	70-135	

Lab Batch #: 3008771 **Sample:** 545114-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/28/17 21:39

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	88.2	99.8	88	70-135	
o-Terphenyl	47.6	49.9	95	70-135	

Lab Batch #: 3008851 **Sample:** 545114-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/17 10:26

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0265	0.0300	88	80-120	
4-Bromofluorobenzene	0.0305	0.0300	102	80-120	

Lab Batch #: 3008851 **Sample:** 545114-013 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/17 10:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0343	0.0300	114	80-120	
4-Bromofluorobenzene	0.0331	0.0300	110	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 545114,

Project ID: 212C-MD-00639

Lab Batch #: 3008851 **Sample:** 545114-028 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/17 11:31

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0301	0.0300	100	80-120	

Lab Batch #: 3008771 **Sample:** 719243-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/28/17 17:04

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	103	100	103	70-135	
o-Terphenyl	56.3	50.0	113	70-135	

Lab Batch #: 3008851 **Sample:** 719276-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/17 10:10

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0244	0.0300	81	80-120	
4-Bromofluorobenzene	0.0242	0.0300	81	80-120	

Lab Batch #: 3008771 **Sample:** 719243-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/28/17 17:26

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	127	100	127	70-135	
o-Terphenyl	64.9	50.0	130	70-135	

Lab Batch #: 3008851 **Sample:** 719276-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/17 08:49

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0277	0.0300	92	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

* Surrogate outside of Laboratory QC limits

** Surrogates outside limits; data and surrogates confirmed by reanalysis

*** Poor recoveries due to dilution

Surrogate Recovery [D] = 100 * A / B

All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 545114,

Project ID: 212C-MD-00639

Lab Batch #: 3008771 **Sample:** 719243-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/28/17 17:49

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	100	129	70-135	
o-Terphenyl	64.2	50.0	128	70-135	

Lab Batch #: 3008851 **Sample:** 719276-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 01/30/17 09:04

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0327	0.0300	109	80-120	
4-Bromofluorobenzene	0.0291	0.0300	97	80-120	

Lab Batch #: 3008771 **Sample:** 544963-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/28/17 18:36

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.3	99.9	99	70-135	
o-Terphenyl	47.8	50.0	96	70-135	

Lab Batch #: 3008851 **Sample:** 545114-001 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/30/17 09:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0340	0.0300	113	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 3008771 **Sample:** 544963-001 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 01/28/17 18:58

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	99.0	99.8	99	70-135	
o-Terphenyl	48.7	49.9	98	70-135	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

Form 2 - Surrogate Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Orders : 545114,
Project ID: 212C-MD-00639
Lab Batch #: 3008851 **Sample:** 545114-001 SD / MSD **Batch:** 1 **Matrix:** Soil
Units: mg/kg **Date Analyzed:** 01/30/17 09:37

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0354	0.0300	118	80-120	

* Surrogate outside of Laboratory QC limits
** Surrogates outside limits; data and surrogates confirmed by reanalysis
*** Poor recoveries due to dilution
Surrogate Recovery [D] = 100 * A / B
All results are based on MDL and validated for QC purposes.

BS / BSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order #: 545114 **Project ID:** 212C-MD-00639

Analyst: ALJ **Date Prepared:** 01/30/2017 **Date Analyzed:** 01/30/2017

Lab Batch ID: 3008851 **Sample:** 719276-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00151	0.101	0.0965	96	0.100	0.0972	97	1	70-130	35	
Toluene	<0.00201	0.101	0.0884	88	0.100	0.0889	89	1	70-130	35	
Ethylbenzene	<0.00201	0.101	0.0957	95	0.100	0.0971	97	1	71-129	35	
m,p-Xylenes	<0.00201	0.201	0.187	93	0.200	0.188	94	1	70-135	35	
o-Xylene	<0.00302	0.101	0.0896	89	0.100	0.0907	91	1	71-133	35	

Analyst: MGO **Date Prepared:** 02/01/2017 **Date Analyzed:** 02/03/2017

Lab Batch ID: 3009410 **Sample:** 719337-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.99	250	253	101	250	253	101	0	90-110	20	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

BS / BSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order #: 545114 **Project ID:** 212C-MD-00639

Analyst: MGO **Date Prepared:** 02/01/2017 **Date Analyzed:** 02/03/2017

Lab Batch ID: 3009420 **Sample:** 719338-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<4.97	249	253	102	249	253	102	0	90-110	20	

Analyst: ARM **Date Prepared:** 01/28/2017 **Date Analyzed:** 01/28/2017

Lab Batch ID: 3008771 **Sample:** 719243-1-BKS **Batch #:** 1 **Matrix:** Solid

Units: mg/kg

BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	1000	885	89	1000	1030	103	15	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	933	93	1000	1040	104	11	70-135	35	

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|
Blank Spike Recovery [D] = 100*(C)/[B]
Blank Spike Duplicate Recovery [G] = 100*(F)/[E]
All results are based on MDL and Validated for QC Purposes

Form 3 - MS / MSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order # : 545114 **Project ID:** 212C-MD-00639

Lab Batch ID: 3008851 **QC- Sample ID:** 545114-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/30/2017 **Date Prepared:** 01/30/2017 **Analyst:** ALJ

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.0998	0.0984	99	0.100	0.0931	93	6	70-130	35	
Toluene	<0.00200	0.0998	0.0860	86	0.100	0.0849	85	1	70-130	35	
Ethylbenzene	<0.00200	0.0998	0.0926	93	0.100	0.116	116	22	71-129	35	
m,p-Xylenes	<0.00200	0.200	0.175	88	0.201	0.203	101	15	70-135	35	
o-Xylene	<0.00299	0.0998	0.0819	82	0.100	0.101	101	21	71-133	35	

Lab Batch ID: 3009410 **QC- Sample ID:** 545114-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/03/2017 **Date Prepared:** 02/01/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	9550	250	9260	0	250	9340	0	1	90-110	20	X

Lab Batch ID: 3009410 **QC- Sample ID:** 545114-014 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/03/2017 **Date Prepared:** 02/01/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	844	250	1040	78	250	1040	78	0	90-110	20	X

Matrix Spike Percent Recovery [D] = 100*(C-A)/B
Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable
N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Form 3 - MS / MSD Recoveries

Project Name: EOG-Red Hills North Unit #102

Work Order # : 545114 **Project ID:** 212C-MD-00639

Lab Batch ID: 3009420 **QC- Sample ID:** 545114-024 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/03/2017 **Date Prepared:** 02/01/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<24.8	248	291	117	248	292	118	0	90-110	20	X

Lab Batch ID: 3009420 **QC- Sample ID:** 545114-034 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 02/03/2017 **Date Prepared:** 02/01/2017 **Analyst:** MGO

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	45.8	243	300	105	243	305	107	2	90-110	20	

Lab Batch ID: 3008771 **QC- Sample ID:** 544963-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/28/2017 **Date Prepared:** 01/28/2017 **Analyst:** ARM

Reporting Units: mg/kg

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C10 Gasoline Range Hydrocarbons	<15.0	999	921	92	998	984	99	7	70-135	35	
C10-C28 Diesel Range Organics	476	999	1370	89	998	1490	102	8	70-135	35	

Matrix Spike Percent Recovery [D] = 100*(C-A)/B

Matrix Spike Duplicate Percent Recovery [G] = 100*(F-A)/E

Relative Percent Difference RPD = 200*|(C-F)/(C+F)|

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

545114

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00639

PROJECT NAME: Red Hills North Unit #102 Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	1/27/17		S		X	BH #1 (0-1)	1	N			X	X	X	X											X				
	↓		↓		↓	BH #1 (2-3)	1	N			X	X												X				
						BH #1 (4-5)	1	N			X	X												X				
						BH #1 (6-7)	1	N			X	X												X				
						BH #1 (9-10)	1	N			X	X												X				
						BH #1 (14-15)	1	N			X	X							HOLD									
						BH #2 (0-1)	1	N			X	X												X				
						BH #2 (2-3)	1	N			X	X												X				
						BH #2 (4-5)	1	N			X	X												X				
	↓		↓		↓	BH #2 (6-7)	1	N			X	X												X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Mike Carmona Date: 1-27-17 Time: 1114

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) MC Date: 1-26-17 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RECEIVING LABORATORY:

ADDRESS: Xenco Midland

CITY: STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Temp: IR ID:R-8
CF:+ 0.1
Corrected Temp: 0.5 0.6

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Ac

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

545114

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00639

PROJECT NAME: Red Hills North Unit #102
Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	1/27/17		S		X	BH #2 (9-10)	1	N			X	X										HOLD						
						BH #2 (14-15)	1	N			X	X										HOLD						
						BH #3 (0-1)	1	N			X	X	X	X										X					
						BH #3 (2-3)	1	N			X	X												X					
						BH #3 (4-5)	1	N			X	X												X					
						BH #3 (6-7)	1	N			X	X												X					
						BH #3 (9-10)	1	N			X	X												X					
						BH #3 (14-15)	1	N			X	X												X					
						BH #3 (19-20)	1	N			X	X												X					
	↓		↓		↓	BH #3 (24-25)	1	N			X	X												X					

RELINQUISHED BY: (Signature) Mike Carmona Date: 1-27-17 Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Initial) MC Date: 1-26-17 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: XENCO Midland
ADDRESS:
CITY: STATE: ZIP: TX
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: IR ID:R-8
CF:+ 0.1 0.5
Corrected Temp: 0.6

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

545114

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00639

PROJECT NAME: Red Hills North Unit #102
Lea County, NM

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	1/27/17		S		X	BH #4 (0-1)	1	N			X	X													X				
						BH #4 (2-3)	1	N			X	X													X				
						BH #4 (4-5)	1	N			X	X													X				
						BH #4 (6-7)	1	N			X	X													X				
						BH #4 (9-10)	1	N			X	X													X				
						BH #4 (14-15)	1	N			X	X													X				
						BH #4 (19-20)	1	N			X	X													X				
						BH #5 (0-1)	1	N			X	X	X	X											X				
						BH #5 (2-3)	1	N			X	X													X				
						BH #5 (4-5)	1	N			X	X													X				

RELINQUISHED BY: (Signature) Mike Carmona — Date: 1-27-17 Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLED BY: (Print & Initial) MC — Date: 1-26-17 Time:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX HAND DELIVERED BUS UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) — Date: Time:
RECEIVED BY: (Signature) — Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Xenco Midland
ADDRESS:
CITY: STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED:
REMARKS:

Temp: IR ID:R-8
CF:+ 0.1 0.5 0.6
Corrected Temp:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy.

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

545114

CLIENT NAME: EOG

SITE MANAGER: Ike Tavarez

PROJECT NO.: 212C-MD-00639

PROJECT NAME: Red Hills North Unit #102
Lea County, NM

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
	1/27/17		S		X	BH #5 (6-7)	1	N			X	X													X			
						BH #5 (9-10)	1	N			X	X													X			
						BH #5 (14-15)	1	N			X	X													X			
						BH #5 (19-20)	1	N			X	X													X			
						BH #5 (24-25)	1	N			X	X													X			

RELINQUISHED BY: (Signature) Mike Cannon Date: 1-27-17 Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLED BY: (Print & Initial) MC Date: 1-26-17 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
OTHER:

RECEIVING LABORATORY: XENCO Midland
ADDRESS: CITY: STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:
RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED:

REMARKS:

Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

XENCO Laboratories
Prelogin/Nonconformance Report- Sample Log-In

Client: Tetra Tech- Midland

Date/ Time Received: 01/27/2017 11:14:00 AM

Work Order #: 545114

Acceptable Temperature Range: 0 - 6 degC
Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	.6
#2 *Shipping container in good condition?	**Yes**
#3 *Samples received on ice?	**Yes**
#4 *Custody Seal present on shipping container/ cooler?	**N/A**
#5 *Custody Seals intact on shipping container/ cooler?	**N/A**
#6 Custody Seals intact on sample bottles?	**N/A**
#7 *Custody Seals Signed and dated?	**N/A**
#8 *Chain of Custody present?	**Yes**
#9 Sample instructions complete on Chain of Custody?	**Yes**
#10 Any missing/extra samples?	**No**
#11 Chain of Custody signed when relinquished/ received?	**Yes**
#12 Chain of Custody agrees with sample label(s)?	**Yes**
#13 Container label(s) legible and intact?	**Yes**
#14 Sample matrix/ properties agree with Chain of Custody?	**Yes**
#15 Samples in proper container/ bottle?	**Yes**
#16 Samples properly preserved?	**Yes**
#17 Sample container(s) intact?	**Yes**
#18 Sufficient sample amount for indicated test(s)?	**Yes**
#19 All samples received within hold time?	**Yes**
#20 Subcontract of sample(s)?	**N/A**
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	**N/A**
#22 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	**N/A**
#23 >10 for all samples preserved with NaAsO2+NaOH, ZnAc+NaOH?	**N/A**

*** Must be completed for after-hours delivery of samples prior to placing in the refrigerator**

Analyst:

PH Device/Lot#:

Checklist completed by: Jessica Kramer
Jessica Kramer
Date: 01/27/2017

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 01/27/2017