SITE INFORMATION

Report Type: Closure Report 2RP-3993

General Site Information:						
Site:	**Ross Gulch 8-3 SWD**					
Company:	**EOG Resources, Inc.**					
Section, Township and Range	**Unit K**	**Sec. 8**	**T 26S**	**R 31E**		
Lease Number:	**API No. 30-015-39736**					
County:	**Eddy County**					
GPS:	**32.05680º N**			**103.80110º W**		
Surface Owner:	Private					
Mineral Owner:						
Directions:	From the intersection of HWY 285 and Longhorn Rd in rural Eddy County, travel EAST on Longhorn Rd for approximately 4.30 mi, turn EAST onto Pipeline Rd for approximately 11.5 miles, turn SOUTH onto lease road for approximately 0.5 mi, turn EAST onto lease road for approximatey 0.10 mi to location.					

Release Data:	
Date Released:	11/6/2016
Type Release:	Produced Water
Source of Contamination:	Lighting Strike
Fluid Released:	1200 bbls
Fluids Recovered:	1140 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***	*130'*

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

June 26, 2017

Mike Bratcher
Environmental Engineer Specialist
Oil Conservation Division, District 2
811 S. First Street
Artesia, New Mexico 88210

Re: Closure Report for the EOG Resources, Inc., Ross Gulch 8-3 SWD, Unit K, Section 8, Township 26 South, Range 31 East, Eddy County, New Mexico. 2RP-3993

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by EOG Resources, Inc, (EOG) to assess and remediate a release that occurred at the Ross Gulch 8-3 SWD, Unit K, Section 8, Township 26 South, Range 31 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.05680º, W 103.80110º. 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 November 6, 2016, and released approximately twelve hundred (1,200) barrels of produced water due to a lightning strike. The majority of the fluids were contained inside the lined facility and some fluids migrated onto the pad, measuring approximately 60' x 150'. Approximately eleven hundred and forty (1,140) barrels of produced water were recovered. The facility was dismantled for the construction of a new facility on the pad. The initial C-141 form is included in Appendix A.

Groundwater

Three (3) water wells are listed within Section 8 on the New Mexico Office of the State Engineer's database and the depth to groundwater listed for the three wells ranged from 292' to 300' below surface. The Geology and Ground-Water Resources of Eddy County, New Mexico, Ground-Water Report 3, reported two wells in Section 8 with depths to groundwater of 250' and 278.5' below surface. Additionally, according to the Chevron Texaco Groundwater Trend Map, the average depth to groundwater in this area shows depth between 275' and 300' below surface. The groundwater data is shown in Appendix B.

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

TETRA TECH

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) 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 Assessment and Analytical Results

On December 5, 2016, Tetra Tech personnel were onsite to evaluate and sample the release area. Three (3) backhoe sample trenches (T-1, T-2, and T-3) were installed to total depths of 2.5' to 5.0' below surface. Additionally, a background trench (T-4 Background) was installed to a depth of 3.0' below surface in order to evaluate the chloride concentrations in the native soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3.

Referring to Table 1, none of the samples showed total TPH, benzene, or total BTEX concentrations above the RRAL's. The area of trenches (T-1, T-2, and T-3) detected traces of total BTEX concentrations of 0.00350 mg/kg, 0.00352 mg/kg, and 0.00317 mg/kg at 0-1' below the RRAL's.

The area of trench (T-2) did not show a significant chloride impact to the area with a concentration high of 377 mg/kg at 0-1' below surface. However, the areas of trenches (T-1 and T-3) showed elevated chloride concentrations in the shallow soils. The area of trench (T-1) showed a chloride concentration of 5,870 mg/kg at 0-1', which then declined with depth to 673 mg/kg at 2.0' and showed a bottom concentration of 45.0 mg/kg at 5.0' below surface. The area of trench (T-3) showed a chloride concentration of 3,110 mg/kg at 0-1', which then declined to 212 mg/kg at 2.0' below surface. However, the chloride concentration spiked to 2,040 mg/kg at 2.5' below surface. Deeper samples could not be collected with the backhoe due to a dense rock formation.

The background trench (T-4) showed chloride concentrations ranging from <50.0 mg/kg at 0-1' to 115 mg/kg at 2.0' below surface.

TETRA TECH

Based on the laboratory results, Tetra Tech personnel returned to the site on December 28, 2016, to re-sample and attempt to grab deeper samples with a backhoe in the area of trench (T-3). One additional sample at trench (T-3) was collected at 2.0-3.0' below surface but could not penetrate the rock formation for deeper samples. Selected samples were analyzed for chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1.

Referring to Table 1, the sample at 2.0-3.0' below surface collected at trench (T-3) showed a declining chloride concentration of 1,060 mg/kg and was not vertically defined. Due to the dense formation, the chloride concentration may have been cross contamination with the upper soils sloughing into the open trench. Based on the depth to groundwater and the limited area on the facility pad, the chloride concentration detected at 2.0-3.0' below surface does not appear to be an environmental concern.

Remediation

On April 24-25, 2017, Tetra Tech personnel were onsite from to supervise the excavation of the impacted areas. As proposed in the work plan, the excavation areas and depths are highlighted (green) in Table 1 and shown on Figure 4. Based on the laboratory results, the area of trench (T-1) was excavated to 1.0' below surface and measured approximately 5' x 75'. In addition, the area of trench (T-3) was excavated to 2.5'-3.0' below surface and measured approximately 25' x 25'.

Once removed to the appropriate depth, a bottom hole sample in the area of trench (T-3) showed a field chloride of approximately 800 ppm at 2.5-3.0' below surface. The excavated areas were then backfilled with clean material to surface grade. All of the excavated material was transported offsite for proper disposal. Approximately 80 cubic yards of material was removed and transported for proper disposal.

Conclusion

Based on the remediation work performed at the site, EOG request closure of this spill issue. The final C-141 is shown in Appendix A. If you have any questions or comments concerning the assessment or remediation activities for this site, please call at (432) 682-4559.

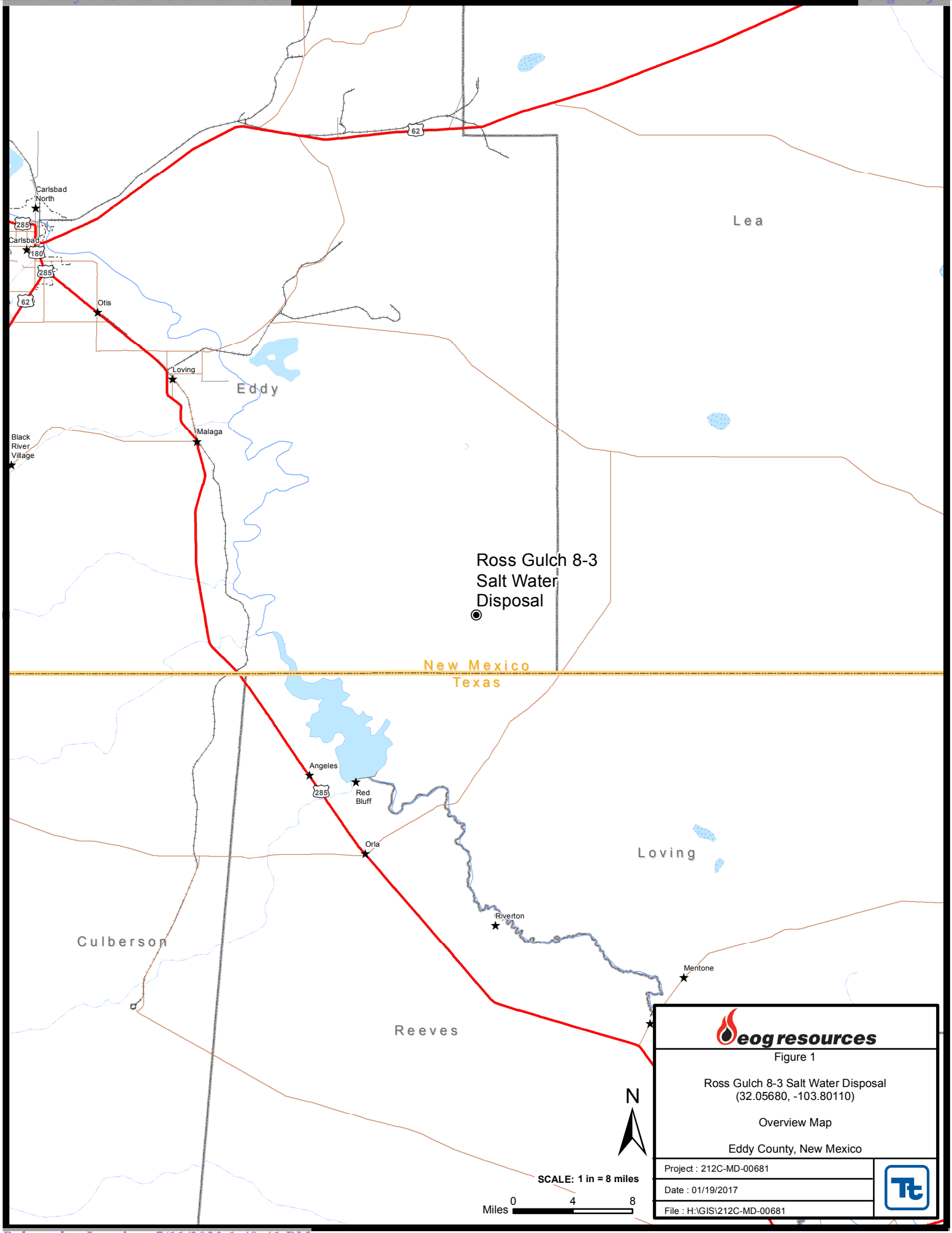
Respectfully submitted,
TETRA TECH

Clair Gonzales,
Geologist I

Ike Tavarez,
Senior Project Manager, P.G.

cc: Zane Kurtz – EOG

Figures



eog resources

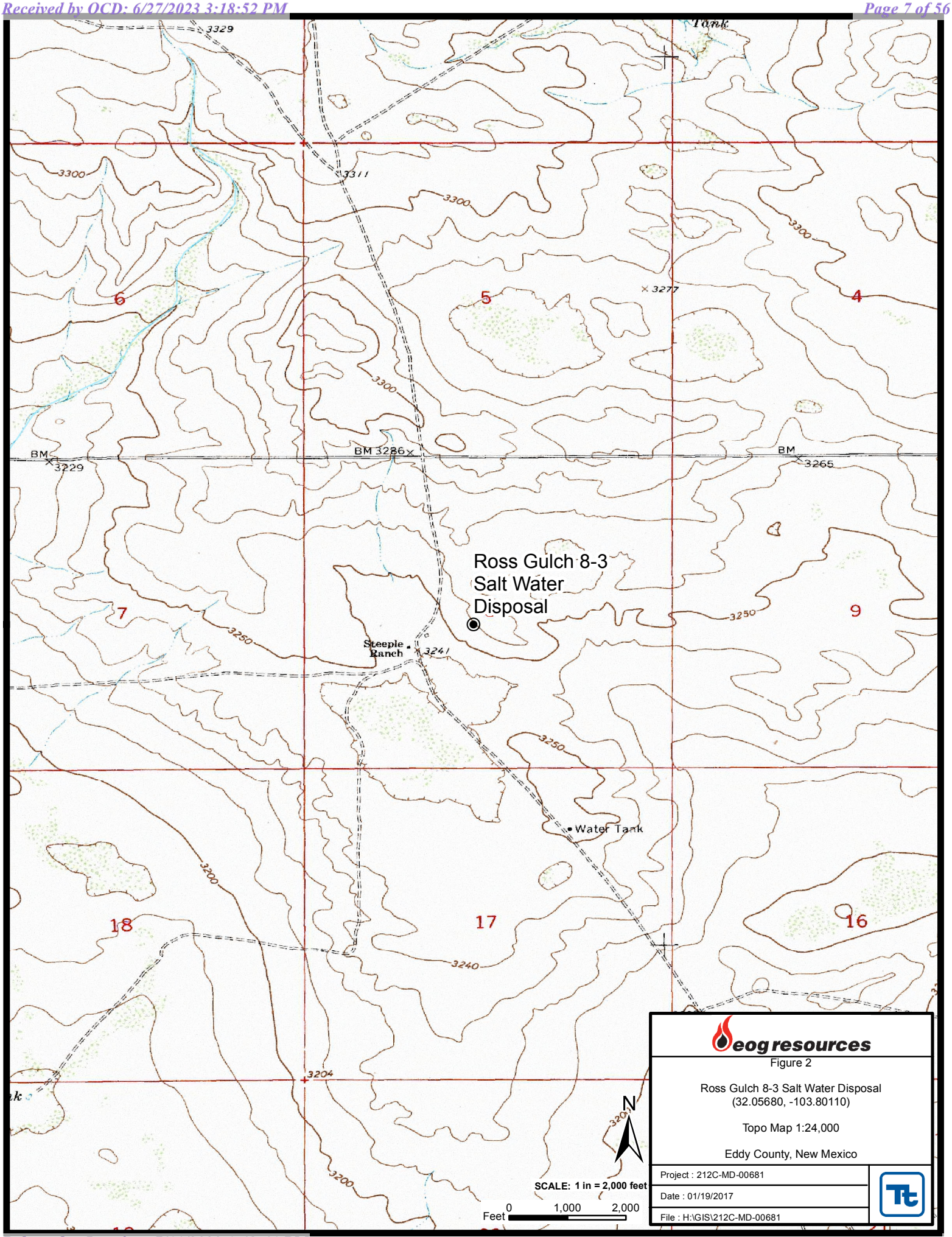
Figure 1

Ross Gulch 8-3 Salt Water Disposal
(32.05680, -103.80110)

Overview Map

Eddy County, New Mexico

Project : 212C-MD-00681	
Date : 01/19/2017	
File : H:\GIS\212C-MD-00681	



eog resources

Figure 2

Ross Gulch 8-3 Salt Water Disposal
(32.05680, -103.80110)

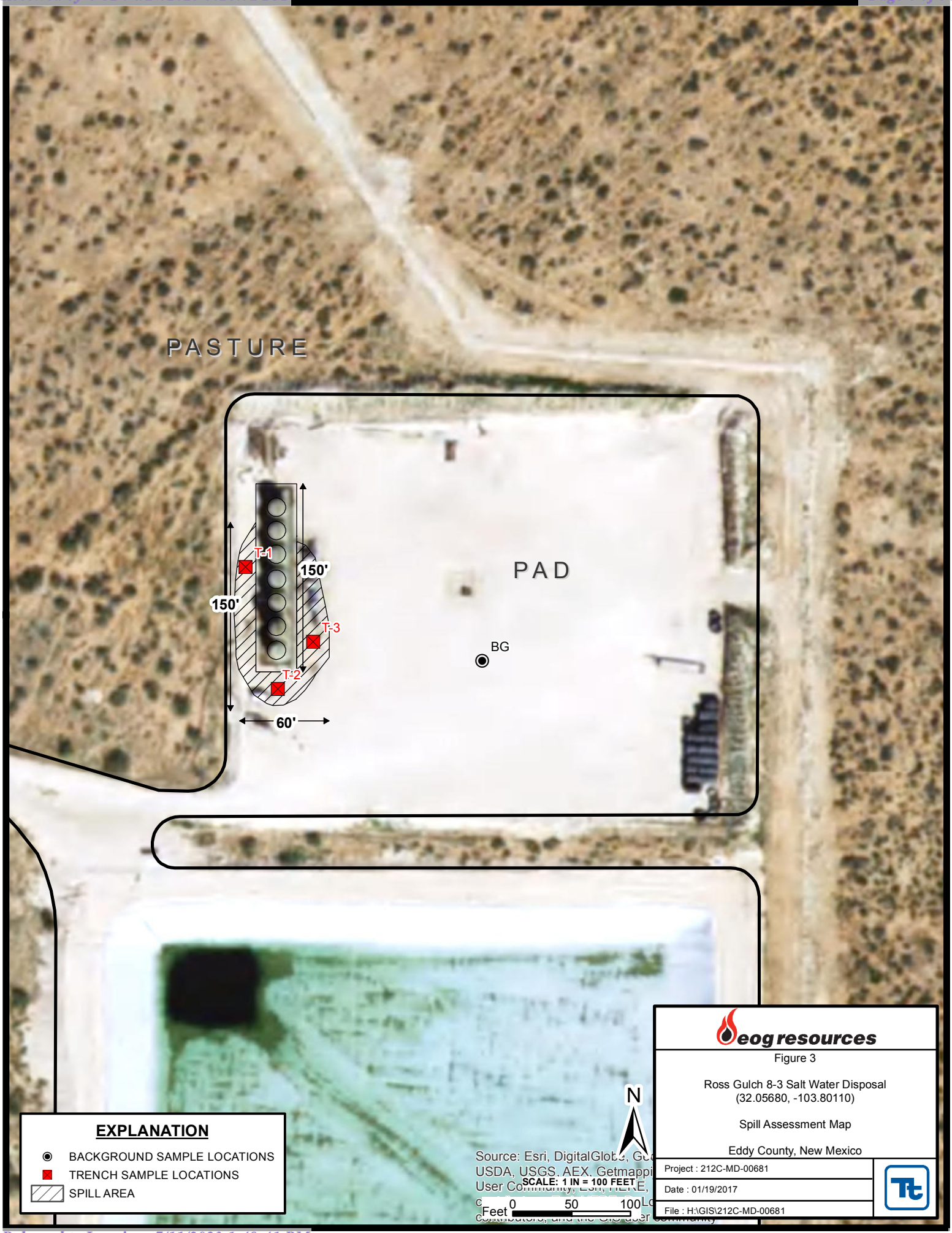
Topo Map 1:24,000

Eddy County, New Mexico

Project : 212C-MD-00681

Date : 01/19/2017

File : H:\GIS\212C-MD-00681



EXPLANATION

- BACKGROUND SAMPLE LOCATIONS
- TRENCH SAMPLE LOCATIONS
- SPILL AREA

eog resources

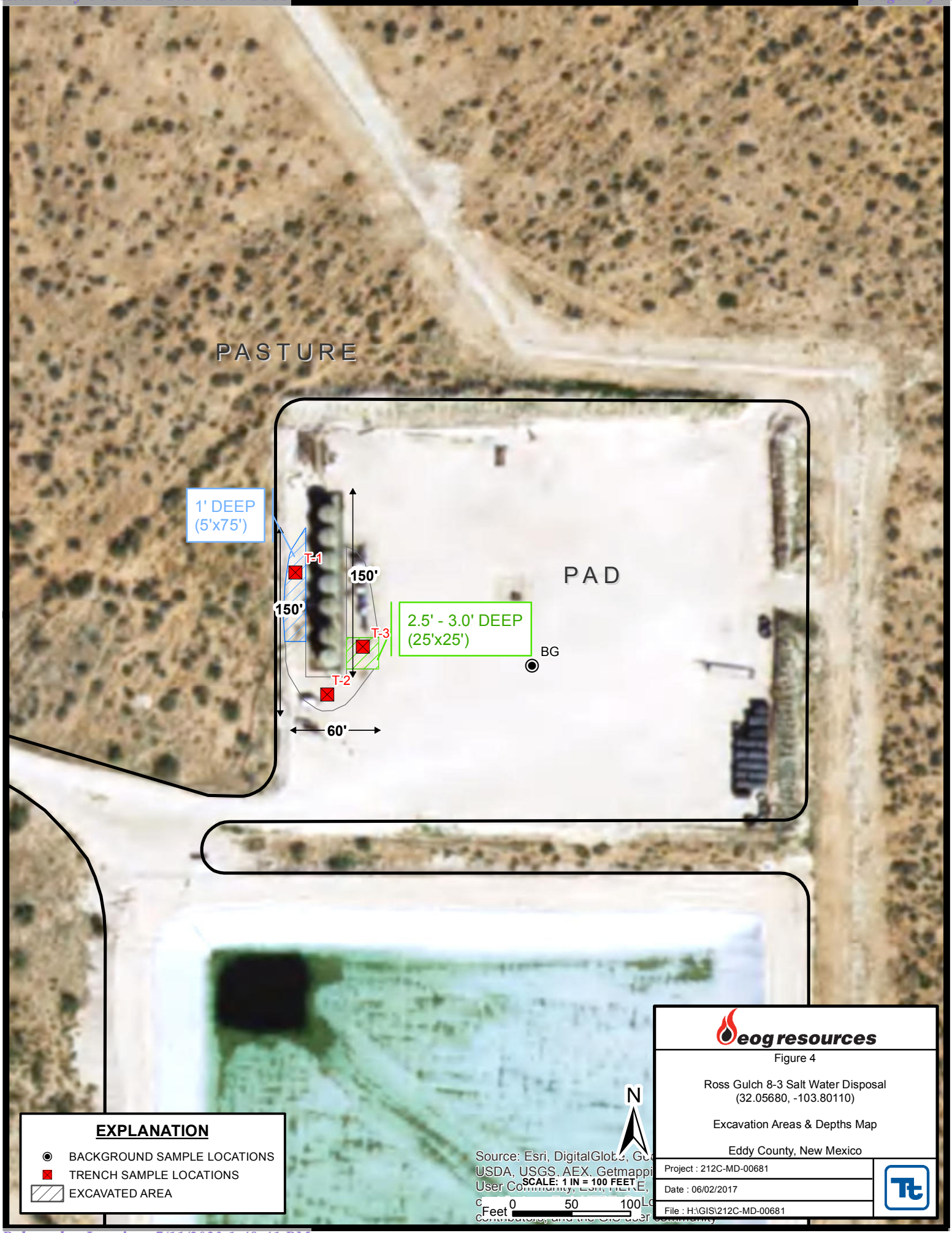
Figure 3

Ross Gulch 8-3 Salt Water Disposal
(32.05680, -103.80110)

Spill Assessment Map

Eddy County, New Mexico

Project : 212C-MD-00681	
Date : 01/19/2017	
File : H:\GIS\212C-MD-00681	



eog resources

Figure 4

Ross Gulch 8-3 Salt Water Disposal
(32.05680, -103.80110)

Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 212C-MD-00681	
Date : 06/02/2017	
File : H:\GIS\212C-MD-00681	

Tables

Table 1
EOG Resources
Ross Gulch 8-3 Salt Water Disposal
Eddy 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						
Trench 1	12/5/2016	0-1	-		X	<15.0	<15.0	<15.0	<0.00149	<0.00198	0.00350	<0.00198	0.00350	**5,870**
	"	2	-	X		-	-	-	-	-	-	-	-	673
	"	4	-	X		-	-	-	-	-	-	-	-	113
	"	5	-	X		-	-	-	-	-	-	-	-	45
Trench 2	12/5/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00151	<0.00201	0.00352	<0.00201	0.00352	377
	"	2	-	X		-	-	-	-	-	-	-	-	146
	"	4	-	X		-	-	-	-	-	-	-	-	60.4
	"	5	-	X		-	-	-	-	-	-	-	-	175
Trench 3	12/5/2016	0-1	-	X		<15.0	<15.0	<15.0	<0.00150	<0.00200	0.00317	<0.00200	0.00317	**3,110**
	"	2	-		X	-	-	-	-	-	-	-	-	212
	"	2.5	-		X	-	-	-	-	-	-	-	-	2,040
Trench 3 (AH-1) *	12/28/2016	2-3	-		X	-	-	-	-	-	-	-	-	1,060
(Bottom hole field reading)		2.5-3.0							Field Chloride					800
Trench 4 (background)	12/5/2016	0-1	-	X		-	-	-	-	-	-	-	-	<50.0
	"	2	-	X		-	-	-	-	-	-	-	-	115
	"	3	-	X		-	-	-	-	-	-	-	-	81.9

(-) Not Analyzed

(BEB) Below Excavation Bottom

Excavation Depths

* Resampled

212C-MD-00681
Xenco Labs

Photos

EOG Resources, Inc.
Ross Gulch 8-3 SWD
Eddy County, New Mexico

TETRA TECH

View North – Area of T-1

View North – Area of T-2

EOG Resources, Inc.
Ross Gulch 8-3 SWD
Eddy County, New Mexico

TETRA TECH

View North – Area of T-3

View North – Area of T-4 Background

EOG Resources, Inc.
Ross Gulch 8-3 SWD
Eddy County, New Mexico

View South – Area of T-1 excavated

View North – Area of T-1 Backfilled

EOG Resources, Inc.
Ross Gulch 8-3 SWD
Eddy County, New Mexico

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View North – Area of T-3 excavated

View North East – Area of T-3 Backfilled

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 Ross Gulch 8-3 SWD	Facility Type active well

Surface Owner FEE	Mineral Owner	API No. 30-015-39736

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	8	26S	31E	2455	S	2452	S	Eddy

Latitude 32.0567 **Longitude** -103.8011

NATURE OF RELEASE

Type of Release Produced Water	Volume of Release 1200bbls	Volume Recovered 1140 bbls
Source of Release Lightning strike	Date and Hour of Occurrence 11-6-16	Date and Hour of Discovery 11-6-16
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
A water tank was struck by lightning that rolled in from a bad storm on 11-6-16. Due to the strike, approximately 1200 bbls of produced water leaked in and around the containment. Vacuum trucks were called in to remove all standing fluids and recovered 1140 bbls of produced water. The facility was shut down and will be dismantled. A new facility will be built on the same pad to the North. Once moved, a 3rd party will begin cleanup efforts to evaluate the release. Further actions will be determined at that time.

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:	OIL CONSERVATION DIVISION	
Printed Name: Jamon Hohensee	Approved by Environmental Specialist:	
Title: Environmental Representative	Approval Date:	Expiration Date:
E-mail Address: jamon_hohensee@eogresources.com	Conditions of Approval:	Attached ☐
Date: 11/10/16 Phone: 432-686-3630		

* Attach Additional Sheets If Necessary

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

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 Ross Gulch 8-3 SWD	Facility Type **Active Well**

Surface Owner: Fee	Mineral Owner	API No. 30-015-39736

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	8	26S	31E	2455	S	2452	S	Eddy

Latitude N 32.0567° **Longitude** W -103.8011°

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 1200bbls	Volume Recovered 1140 bbls
Source of Release: Lighting strike	Date and Hour of Occurrence 11-6-16	Date and Hour of Discovery 11-6-16
Was Immediate Notice Given? ☐ Yes ☐ No ☒ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

N/A

Describe Cause of Problem and Remedial Action Taken.*
A water tank was struck lighting that rolled in from a bad storm on 11-6-16. Due to the strike, approximately 1200 bbls of produced water leaked in and around the containment. Vacuum trucks were called in to remove all the standing fluids and recovered 1140 bbls of produced water. The facility was shut down and will be dismantled. A new facility will be built on the same pad to the North.

Describe Area Affected and Cleanup Action Taken.*
Tetra Tech inspected the site and collected samples to define the spill extent. Soil that exceeded the RRAL was removed and hauled away for proper disposal. The site was then brought up to surface grade with clean backfill material. Tetra Tech prepared closure report and submitted to NMOCD for review.

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

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Ike Tavarez (agent for EOG)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: Ike.Tavarez@TetraTech.com	Conditions of Approval:	Attached ☐
Date: 6/26/17 Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Site Assessment/Characterization

This information must be provided to the appropriate district office no later than 90 days after the release discovery date.

What is the shallowest depth to groundwater beneath the area affected by the release?	_____ (ft bgs)
Did this release impact groundwater or surface water?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a continuously flowing watercourse or any other significant watercourse?	☐ Yes ☐ No
Are the lateral extents of the release within 200 feet of any lakebed, sinkhole, or playa lake (measured from the ordinary high-water mark)?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of an occupied permanent residence, school, hospital, institution, or church?	☐ Yes ☐ No
Are the lateral extents of the release within 500 horizontal feet of a spring or a private domestic fresh water well used by less than five households for domestic or stock watering purposes?	☐ Yes ☐ No
Are the lateral extents of the release within 1000 feet of any other fresh water well or spring?	☐ Yes ☐ No
Are the lateral extents of the release within incorporated municipal boundaries or within a defined municipal fresh water well field?	☐ Yes ☐ No
Are the lateral extents of the release within 300 feet of a wetland?	☐ Yes ☐ No
Are the lateral extents of the release overlying a subsurface mine?	☐ Yes ☐ No
Are the lateral extents of the release overlying an unstable area such as karst geology?	☐ Yes ☐ No
Are the lateral extents of the release within a 100-year floodplain?	☐ Yes ☐ No
Did the release impact areas **not** on an exploration, development, production, or storage site?	☐ Yes ☐ No

Attach a comprehensive report (electronic submittals in .pdf format are preferred) demonstrating the lateral and vertical extents of soil contamination associated with the release have been determined. Refer to 19.15.29.11 NMAC for specifics.

Characterization Report Checklist: ***Each of the following items must be included in the report.***

- ☐ Scaled site map showing impacted area, surface features, subsurface features, delineation points, and monitoring wells.
- ☐ Field data
- ☐ Data table of soil contaminant concentration data
- ☐ Depth to water determination
- ☐ Determination of water sources and significant watercourses within ½-mile of the lateral extents of the release
- ☐ Boring or excavation logs
- ☐ Photographs including date and GIS information
- ☐ Topographic/Aerial maps
- ☐ Laboratory data including chain of custody

If the site characterization report does not include completed efforts at remediation of the release, the report must include a proposed remediation plan. That plan must include the estimated volume of material to be remediated, the proposed remediation technique, proposed sampling plan and methods, anticipated timelines for beginning and completing the remediation. The closure criteria for a release are contained in Table 1 of 19.15.29.12 NMAC, however, use of the table is modified by site- and release-specific parameters.

Form C-141
Page 4

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 06/28/2023

State of New Mexico
Oil Conservation Division

Incident ID	
District RP	
Facility ID	
Application ID	

Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

Closure Report Attachment Checklist: ***Each of the following items must be included in the closure report.***

☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC

☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)

☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)

☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: _____ Title: _____

Signature: _____ Date: _____

email: _____ Telephone: _____

OCD Only

Received by: Jocelyn Harimon Date: 06/28/2023

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: _____ Date: 07/11/2023

Printed Name: Jocelyn Harimon Title: Environmental Specialist

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
EOG - Ross Gulch 8-3 SWD
Eddy County, New Mexico

25 South 30 East

6	5	4	3	2 295	1
7 264	8	9 295	10	11	12 390
18	17	16	15	14	13
19	20	21 265 268	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

25 South 31 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 390 290	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

26 South 30 East

6	5 179 180	4	3	2	1
7	8 172	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24 180
30	29	28	27	26	25
31	32	33	34	35	36

26 South 31 East

6	5	4	3	2	1 335 287
7	8 295 275	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

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

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 01777	C	ED				08	26S	31E	613245	3547409*	325	300	25
C 02090		ED		4	4	01	26S	31E	620329	3548533*	350	335	15
C 02248		ED	1	2	3	08	26S	31E	612942	3547316*	300	292	8
C 02249		ED	1	2	3	08	26S	31E	612942	3547316*	300	292	8
C 03554 POD1	CUB	ED	2	1	4	01	26S	31E	620547	3549148	630	300	330
C 03639 POD1	CUB	ED	3	4	2	01	26S	31E	620168	3549279	700	365	335

Average Depth to Water: **314 feet**

Minimum Depth: **292 feet**

Maximum Depth: **365 feet**

Record Count: 6

PLSS Search:

Township: 26S **Range:** 31E

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

Appendix C

Analytical Report 541643

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

EOG - Ross Gulch 8-3 SWD

212C-MD-00681

15-DEC-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)

15-DEC-16

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

Reference: XENCO Report No(s): **541643**
EOG - Ross Gulch 8-3 SWD
Project Address: Eddy 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) 541643. 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. 541643 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 541643

Tetra Tech- Midland, Midland, TX

EOG - Ross Gulch 8-3 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
Trench #1 0-1'	S	12-05-16 00:00	0 - 1 ft	541643-001
Trench #1 2'	S	12-05-16 00:00	- 2 ft	541643-002
Trench #1 4'	S	12-05-16 00:00	- 4 ft	541643-003
Trench #1 5'	S	12-05-16 00:00	- 5 ft	541643-004
Trench #2 0-1'	S	12-05-16 00:00	0 - 1 ft	541643-005
Trench #2 2'	S	12-05-16 00:00	- 2 ft	541643-006
Trench #2 4'	S	12-05-16 00:00	- 4 ft	541643-007
Trench #2 5'	S	12-05-16 00:00	- 5 ft	541643-008
Trench #3 0-1'	S	12-05-16 00:00	0 - 1 ft	541643-009
Trench #3 2'	S	12-05-16 00:00	- 2 ft	541643-010
Trench #3 2.5'	S	12-05-16 00:00	- 2.5 ft	541643-011
Trench #4 0-1' Background	S	12-05-16 00:00	0 - 1 ft	541643-012
Trench #4 2' Background	S	12-05-16 00:00	- 2 ft	541643-013
Trench #4 3' Background	S	12-05-16 00:00	- 3 ft	541643-014

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: EOG - Ross Gulch 8-3 SWD

Project ID: *212C-MD-00681*
Work Order Number(s): *541643*

Report Date: *15-DEC-16*
Date Received: *12/08/2016*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Analytical non conformances and comments:

Batch: LBA-3005304 BTEX by EPA 8021B

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

Certificate of Analysis Summary 541643

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Ross Gulch 8-3 SWD

Project Id: 212C-MD-00681
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Thu Dec-08-16 09:40 am
Report Date: 15-DEC-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	541643-001		541643-002		541643-003		541643-004		541643-005		541643-006	
	Field Id:	Trench #1 0-1'		Trench #1 2'		Trench #1 4'		Trench #1 5'		Trench #2 0-1'		Trench #2 2'	
	Depth:	0-1 ft		2 ft		4 ft		5 ft		0-1 ft		2 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00	
BTEX by EPA 8021B	***Extracted:***	Dec-08-16 15:00								Dec-08-16 15:00			
	Analyzed:	Dec-08-16 22:42								Dec-08-16 22:59			
	Units/RL:	mg/kg	RL							mg/kg	RL		
Benzene		<0.00149	0.00149							<0.00151	0.00151		
Toluene		<0.00198	0.00198							<0.00201	0.00201		
Ethylbenzene		0.00350	0.00198							0.00352	0.00201		
m,p-Xylenes		<0.00198	0.00198							<0.00201	0.00201		
o-Xylene		<0.00297	0.00297							<0.00301	0.00301		
Total Xylenes		<0.00198	0.00198							<0.00201	0.00201		
Total BTEX		0.00350	0.00149							0.00352	0.00151		
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-12-16 17:25		Dec-12-16 17:25		Dec-12-16 17:25		Dec-12-16 17:25		Dec-12-16 17:25		Dec-12-16 17:25	
	Analyzed:	Dec-12-16 20:16		Dec-12-16 20:30		Dec-12-16 20:37		Dec-12-16 20:44		Dec-12-16 20:51		Dec-12-16 20:58	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		5870	100	673	50.0	113	5.00	45.1	5.00	377	5.00	146	50.0
TPH By SW8015 Mod	***Extracted:***	Dec-14-16 07:00								Dec-14-16 07:00			
	Analyzed:	Dec-14-16 15:38								Dec-14-16 16:01			
	Units/RL:	mg/kg	RL							mg/kg	RL		
C6-C10 Gasoline Range Hydrocarbons		<15.0	15.0							<15.0	15.0		
C10-C28 Diesel Range Hydrocarbons		<15.0	15.0							<15.0	15.0		
C28-C35 Oil Range Hydrocarbons		<15.0	15.0							<15.0	15.0		
Total TPH		<15.0	15.0							<15.0	15.0		

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks
Project Manager

Final 1.000

Certificate of Analysis Summary 541643

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Ross Gulch 8-3 SWD

Project Id: 212C-MD-00681
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Thu Dec-08-16 09:40 am
Report Date: 15-DEC-16
Project Manager: Kelsey Brooks

Analysis Requested													
	Lab Id:	541643-007		541643-008		541643-009		541643-010		541643-011		541643-012	
	Field Id:	Trench #2 4'		Trench #2 5'		Trench #3 0-1'		Trench #3 2'		Trench #3 2.5'		Trench #4 0-1' Background	
	Depth:	4 ft		5 ft		0-1 ft		2 ft		2.5 ft		0-1 ft	
	Matrix:	SOIL		SOIL		SOIL		SOIL		SOIL		SOIL	
	Sampled:	Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00		Dec-05-16 00:00	
BTEX by EPA 8021B	***Extracted:***					Dec-08-16 15:00							
	Analyzed:					Dec-08-16 23:14							
	Units/RL:					mg/kg	RL						
Benzene						<0.00150	0.00150						
Toluene						<0.00200	0.00200						
Ethylbenzene						0.00317	0.00200						
m,p-Xylenes						<0.00200	0.00200						
o-Xylene						<0.00301	0.00301						
Total Xylenes						<0.00200	0.00200						
Total BTEX						0.00317	0.00150						
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-12-16 17:25		Dec-13-16 14:18		Dec-13-16 14:18		Dec-13-16 14:18		Dec-13-16 14:18		Dec-13-16 14:18	
	Analyzed:	Dec-12-16 21:05		Dec-13-16 17:32		Dec-13-16 17:53		Dec-13-16 18:00		Dec-13-16 18:07		Dec-13-16 18:28	
	Units/RL:	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL	mg/kg	RL
Chloride		60.4	5.00	175	5.00	3110	50.0	212	5.00	2040	25.0	<50.0	50.0
TPH By SW8015 Mod	***Extracted:***					Dec-14-16 07:00							
	Analyzed:					Dec-14-16 16:23							
	Units/RL:					mg/kg	RL						
C6-C10 Gasoline Range Hydrocarbons						<15.0	15.0						
C10-C28 Diesel Range Hydrocarbons						<15.0	15.0						
C28-C35 Oil Range Hydrocarbons						<15.0	15.0						
Total TPH						<15.0	15.0						

Kelsey Brooks
Project Manager

Certificate of Analysis Summary 541643

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Ross Gulch 8-3 SWD

Project Id: 212C-MD-00681
Contact: Ike Tavarez
Project Location: Eddy Co, NM

Date Received in Lab: Thu Dec-08-16 09:40 am
Report Date: 15-DEC-16
Project Manager: Kelsey Brooks

Analysis Requested									
	Lab Id:	541643-013		541643-014					
	Field Id:	Trench #4 2' Background		Trench #4 3' Background					
	Depth:	2 ft		3 ft					
	Matrix:	SOIL		SOIL					
	Sampled:	Dec-05-16 00:00		Dec-05-16 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Dec-13-16 14:18		Dec-13-16 14:18					
	Analyzed:	Dec-13-16 18:35		Dec-13-16 18:42					
	Units/RL:	mg/kg	RL	mg/kg	RL				
Chloride		115	50.0	81.9	25.0				

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 - Ross Gulch 8-3 SWD

Work Orders : 541643,

Project ID: 212C-MD-00681

Lab Batch #: 3005304 **Sample:** 541643-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/08/16 22:42

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0297	0.0300	99	80-120	
4-Bromofluorobenzene	0.0341	0.0300	114	80-120	

Lab Batch #: 3005304 **Sample:** 541643-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/08/16 22:59

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0313	0.0300	104	80-120	
4-Bromofluorobenzene	0.0351	0.0300	117	80-120	

Lab Batch #: 3005304 **Sample:** 541643-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/08/16 23:14

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0312	0.0300	104	80-120	
4-Bromofluorobenzene	0.0317	0.0300	106	80-120	

Lab Batch #: 3005750 **Sample:** 541643-001 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/14/16 15:38

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	90.9	100	91	70-135	
o-Terphenyl	43.8	50.0	88	70-135	

Lab Batch #: 3005750 **Sample:** 541643-005 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/14/16 16:01

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.0	99.9	94	70-135	
o-Terphenyl	45.9	50.0	92	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 - Ross Gulch 8-3 SWD

Work Orders : 541643,

Project ID: 212C-MD-00681

Lab Batch #: 3005750 **Sample:** 541643-009 / SMP **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/14/16 16:23

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.6	99.7	92	70-135	
o-Terphenyl	43.5	49.9	87	70-135	

Lab Batch #: 3005304 **Sample:** 717020-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/08/16 21:21

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B

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

Lab Batch #: 3005750 **Sample:** 717305-1-BLK / BLK **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/14/16 09:27

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	100	99	70-135	
o-Terphenyl	48.3	50.0	97	70-135	

Lab Batch #: 3005304 **Sample:** 717020-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/08/16 19:12

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	0.0327	0.0300	109	80-120	

Lab Batch #: 3005750 **Sample:** 717305-1-BKS / BKS **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/14/16 09:48

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod

Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	49.2	50.0	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 - Ross Gulch 8-3 SWD

Work Orders : 541643,

Project ID: 212C-MD-00681

Lab Batch #: 3005304 **Sample:** 717020-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/08/16 19:29

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0314	0.0300	105	80-120	
4-Bromofluorobenzene	0.0321	0.0300	107	80-120	

Lab Batch #: 3005750 **Sample:** 717305-1-BSD / BSD **Batch:** 1 **Matrix:** Solid

Units: mg/kg **Date Analyzed:** 12/14/16 10:10

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	121	100	121	70-135	
o-Terphenyl	50.3	50.0	101	70-135	

Lab Batch #: 3005304 **Sample:** 541624-011 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/08/16 20:16

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0338	0.0300	113	80-120	
4-Bromofluorobenzene	0.0340	0.0300	113	80-120	

Lab Batch #: 3005750 **Sample:** 541854-065 S / MS **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/14/16 18:13

SURROGATE RECOVERY STUDY

TPH By SW8015 Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	122	99.8	122	70-135	
o-Terphenyl	50.7	49.9	102	70-135	

Lab Batch #: 3005304 **Sample:** 541624-011 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/08/16 20:33

SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0329	0.0300	110	80-120	
4-Bromofluorobenzene	0.0338	0.0300	113	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 - Ross Gulch 8-3 SWD

Work Orders : 541643,

Project ID: 212C-MD-00681

Lab Batch #: 3005750 **Sample:** 541854-065 SD / MSD **Batch:** 1 **Matrix:** Soil

Units: mg/kg **Date Analyzed:** 12/14/16 18:34

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	53.6	50.0	107	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 - Ross Gulch 8-3 SWD

Work Order #: 541643 **Project ID:** 212C-MD-00681

Analyst: ALJ **Date Prepared:** 12/08/2016 **Date Analyzed:** 12/08/2016

Lab Batch ID: 3005304 **Sample:** 717020-1-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	<0.00149	0.0994	0.0774	78	0.0998	0.0767	77	1	70-130	35	
Toluene	<0.00199	0.0994	0.0737	74	0.0998	0.0723	72	2	70-130	35	
Ethylbenzene	<0.00199	0.0994	0.0787	79	0.0998	0.0771	77	2	71-129	35	
m,p-Xylenes	<0.00199	0.199	0.159	80	0.200	0.155	78	3	70-135	35	
o-Xylene	<0.00298	0.0994	0.0797	80	0.0998	0.0779	78	2	71-133	35	

Analyst: SLU **Date Prepared:** 12/12/2016 **Date Analyzed:** 12/12/2016

Lab Batch ID: 3005469 **Sample:** 717126-1-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	258	103	250	262	105	2	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 - Ross Gulch 8-3 SWD

Work Order #: 541643 **Project ID:** 212C-MD-00681

Analyst: SLU **Date Prepared:** 12/13/2016 **Date Analyzed:** 12/13/2016

Lab Batch ID: 3005600 **Sample:** 717181-1-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	266	106	250	264	106	1	90-110	20	

Analyst: ARM **Date Prepared:** 12/14/2016 **Date Analyzed:** 12/14/2016

Lab Batch ID: 3005750 **Sample:** 717305-1-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	864	86	1000	874	87	1	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	1000	926	93	1000	958	96	3	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 - Ross Gulch 8-3 SWD

Work Order # : 541643 **Project ID:** 212C-MD-00681

Lab Batch ID: 3005304 **QC- Sample ID:** 541624-011 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/08/2016 **Date Prepared:** 12/08/2016 **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	<0.00151	0.100	0.0813	81	0.100	0.0752	75	8	70-130	35	
Toluene	<0.00201	0.100	0.0772	77	0.100	0.0709	71	9	70-130	35	
Ethylbenzene	0.00204	0.100	0.0821	80	0.100	0.0759	74	8	71-129	35	
m,p-Xylenes	<0.00201	0.201	0.163	81	0.200	0.150	75	8	70-135	35	
o-Xylene	<0.00301	0.100	0.0810	81	0.100	0.0756	76	7	71-133	35	

Lab Batch ID: 3005469 **QC- Sample ID:** 541513-034 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/12/2016 **Date Prepared:** 12/12/2016 **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	14.8	250	268	101	250	256	96	5	90-110	20	

Lab Batch ID: 3005469 **QC- Sample ID:** 541522-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/12/2016 **Date Prepared:** 12/12/2016 **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	735	765	1460	95	765	1530	104	5	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 - Ross Gulch 8-3 SWD

Work Order # : 541643 **Project ID:** 212C-MD-00681

Lab Batch ID: 3005600 **QC- Sample ID:** 541643-008 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/13/2016 **Date Prepared:** 12/13/2016 **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	175	250	428	101	250	416	96	3	90-110	20	

Lab Batch ID: 3005600 **QC- Sample ID:** 541731-001 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/13/2016 **Date Prepared:** 12/13/2016 **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	20.5	250	265	98	250	270	100	2	90-110	20	

Lab Batch ID: 3005750 **QC- Sample ID:** 541854-065 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 12/14/2016 **Date Prepared:** 12/14/2016 **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	998	941	94	1000	1000	100	6	70-135	35	
C10-C28 Diesel Range Hydrocarbons	<15.0	998	1010	101	1000	1030	103	2	70-135	35	

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.

5411643

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-00681

PROJECT NAME: Ross Gulch 8-3 SWD Loving 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
	12/5/16		S		X	Trench #1 0-1	1	N			X		X	X											X			
						Trench #1 2'	1	N			X														X			
						Trench 1 4'	1	N			X														X			
						Trench 1 5	1	N			X														X			
						Trench #2 0-1	1	N			X		X	X											X			
						Trench #2 2'	1	N			X														X			
						Trench #2 4'	1	N			X														X			
						Trench #2 5'	1	N			X														X			
						Trench #3 0-1	1	N			X		X	X											X			
	↓		↓		↓	Trench #3 2'	1	N			X														X			

RELINQUISHED BY: (Signature) Date: 12-5-16 Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) MC JMM Date: Time: 12-1-16

RELINQUISHED BY: (Signature) Date: 12-8-16 Time: 940

RECEIVED BY: (Signature) Date: 12.9.16 Time: 940

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

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: XENCO
ADDRESS: CITY: Midland STATE: TX ZIP: 79707
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 sample if TPH exceed 5,000 mg/kg
Run deeper sample if Benzene exceeds 10 mg/kg or total BTEX exceed 50 mg/kg

Temp: IR ID:R-8
CF:+ 0.1 2.2
Corrected Temp: 2.3

- Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

5411643

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

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-00681

PROJECT NAME: Ross Gulch 8-3 SWD

Loving 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
	12/5/14		S			Trench #3 2.5'	1	N			X													X				
	↓		↓		↓	Trench #4 0-1 Background	1	N			X													X				
						Trench #4 2' Background	1	N			X													X				
						Trench #4 3' Background	1	N			X													X				

RELINQUISHED BY: (Signature) Mike Carmona Date: 12-5-14 Time: 1230

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) MC & MM Date: 12-1-16 Time:

RELINQUISHED BY: (Signature) Date: 12-5-14 Time: 1400

RECEIVED BY: (Signature) Date: 12.9.16 Time: 940

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

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: XENCO

ADDRESS: 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:

Plea Temp: IR ID:R-8
CF:+ 0.1 2.2
Corrected Temp: 2.3

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: 12/08/2016 09:40:00 AM

Work Order #: 541643

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)?	2.3
#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 Date: 12/08/2016

Jessica Kramer

Checklist reviewed by: Kelsey Brooks Date: 12/08/2016

Kelsey Brooks

Analytical Report 543108

for

Tetra Tech- Midland

Project Manager: Ike Tavarez

EOG - Ross Gulch 8-3 SWD

212C-MD-00681

09-JAN-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)

09-JAN-17

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

Reference: XENCO Report No(s): **543108**
EOG - Ross Gulch 8-3 SWD
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) 543108. 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. 543108 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

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified and approved by numerous States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY

Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America

Sample Cross Reference 543108

Tetra Tech- Midland, Midland, TX

EOG - Ross Gulch 8-3 SWD

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
2-3 AH1	S	12-28-16 00:00	2 - 3 ft	543108-003
0-1 AH1	S	12-28-16 00:00	0 - 1 ft	Not Analyzed
1-2 AH1	S	12-28-16 00:00	1 - 2 ft	Not Analyzed

CASE NARRATIVE

Client Name: Tetra Tech- Midland

Project Name: EOG - Ross Gulch 8-3 SWD

Project ID: *212C-MD-00681*
Work Order Number(s): *543108*

Report Date: *09-JAN-17*
Date Received: *12/30/2016*

Sample receipt non conformances and comments:

Sample receipt non conformances and comments per sample:

None

Certificate of Analysis Summary 543108

Tetra Tech- Midland, Midland, TX

Project Name: EOG - Ross Gulch 8-3 SWD

Project Id: 212C-MD-00681
Contact: Ike Tavarez
Project Location: Lea Co NM

Date Received in Lab: Fri Dec-30-16 12:00 pm
Report Date: 09-JAN-17
Project Manager: Kelsey Brooks

Analysis Requested							
	Lab Id:	543108-003					
	Field Id:	2-3 AH1					
	Depth:	2-3 ft					
	Matrix:	SOIL					
	Sampled:	Dec-28-16 00:00					
Inorganic Anions by EPA 300/300.1	***Extracted:***	Jan-05-17 17:00					
	Analyzed:	Jan-05-17 23:56					
	Units/RL:	mg/kg	RL				
Chloride		1060	25.0				

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

BS / BSD Recoveries

Project Name: EOG - Ross Gulch 8-3 SWD

Work Order #: 543108 **Project ID:** 212C-MD-00681

Analyst: MNR **Date Prepared:** 01/05/2017 **Date Analyzed:** 01/05/2017

Lab Batch ID: 3007054 **Sample:** 718136-1-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	245	98	250	241	96	2	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

Form 3 - MS / MSD Recoveries

Project Name: EOG - Ross Gulch 8-3 SWD

Work Order # : 543108 **Project ID:** 212C-MD-00681

Lab Batch ID: 3007054 **QC- Sample ID:** 542888-013 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/05/2017 **Date Prepared:** 01/05/2017 **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	<5.00	250	251	100	250	263	105	5	90-110	20	

Lab Batch ID: 3007054 **QC- Sample ID:** 543111-005 S **Batch #:** 1 **Matrix:** Soil

Date Analyzed: 01/06/2017 **Date Prepared:** 01/05/2017 **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	1300	250	1560	104	250	1560	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.

Analysis Request of Chain of Custody Record

543108

PAGE: 1 OF: 1

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-00681

PROJECT NAME: Boss Gulch 8-3 SWD 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
	12-28-16				X	0-1 AH1	1	N			X	X
	12-28-16				X	1-2 AH1	1	N			X	X
	12-28-16				X	2-3 AH1	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				

RELINQUISHED BY: (Signature) Date: 12-30-16 Time: 1200

RECEIVED BY: (Signature) Date: 12-30-16 Time: 12:00

SAMPLED BY: (Print & Initial) Mathew McDaniel Date: 12-28-16 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:

RECEIVING LABORATORY: Xenco

ADDRESS:

CITY: Midland STATE: TX ZIP:

PHONE:

RECEIVED BY: (Signature)

DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

Temp: IR ID:R-8
CF:+ 0.1 0.3°c
Corrected Temp: 0.4°c

REMARKS: Hold other 2 Samples.

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: 12/30/2016 12:00:00 PM

Work Order #: 543108

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)?	.4
#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: 12/30/2016

Checklist reviewed by: Kelsey Brooks
Kelsey Brooks
Date: 12/30/2016

District I
1625 N. French Dr., Hobbs, NM 88240
Phone:(575) 393-6161 Fax:(575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone:(575) 748-1283 Fax:(575) 748-9720
District III
1000 Rio Brazos Rd., Aztec, NM 87410
Phone:(505) 334-6178 Fax:(505) 334-6170
District IV
1220 S. St Francis Dr., Santa Fe, NM 87505
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico
Energy, Minerals and Natural Resources
Oil Conservation Division
1220 S. St Francis Dr.
Santa Fe, NM 87505

CONDITIONS

Action 233528

CONDITIONS

Operator: EOG RESOURCES INC P.O. Box 2267 Midland, TX 79702	OGRID: 7377
	Action Number: 233528
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
jharimon	None	7/11/2023