

SITE INFORMATION

Report Type: Work Plan

General Site Information:

Site:	RJ Unit #125 Tank Battery				
Company:	COG Operating LLC				
Section, Township and Range	Unit C	Sec 35	T 17S	R 29E	
Lease Number:	API-330-015-03783				
County:	Eddy County				
GPS:	N 32.79474		W 104.04760		
Surface Owner:	Federal				
Mineral Owner:					
Directions:	From intersection of 360 and US 82, go east on 82 for 3.4 miles, turn south onto lease road and continue for 2 miles. Turn East onto another lease road for 0.3 miles to location				

Release Data:

Date Released:	8/9/2013
Type Release:	Produced Water
Source of Contamination:	Valve washout
Fluid Released:	35 bls
Fluids Recovered:	32 bbls

Official Communication:

Name:	Robert McNeil		Ike Tavaréz
Company:	COG Operating, LLC		Tetra Tech
Address:	One Concho Center		1910 N. Big Spring
	600 W. Illinois Ave.		
City:	Midland Texas, 79701		Midland, Texas
Phone number:	(432) 686-3023		(432) 682-4559
Fax:	(432) 684-7137		(432) 682-3946
Email:	rmcneil@conchoresources.com		ike.tavarez@tetrattech.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



January 7, 2014

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

Re: Work Plan for the COG Operating LLC., RJ Unit, #125 Tank Battery, Unit C, Section 35, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the RJ Unit, #125 Tank Battery located in Unit C, Section 35, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.79474°, W 104.04760°. 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 August 9, 2013, and released approximately 35 barrels of produced water from a discharge water line. To alleviate the problem, COG personnel removed the discharge line going to the remover pump. Approximately 32 barrels of standing fluids were recovered. All of the fluids remained inside the facility firewalls. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 35. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 200' below surface. The groundwater data is shown in Appendix B.

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 August 29, 2013, Tetra Tech personnel inspected and sampled the spill area. Four (4) auger holes (AH-1 through AH-4) were installed using a stainless steel hand auger to assess the impacted 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. The sampling results are summarized in Table 1. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C.

Referring to Table 1, all of the sample locations were below the RRAL for TPH and BTEX, except for AH-2. Auger hole (AH-2) showed a TPH of 6,500 mg/kg at 0-1' and declined below the RRAL at 1-1.5' below surface. All of the auger hole locations showed elevated chloride in the subsurface soils to a depth of 9.0' below surface. The chloride impact was not vertically defined.

On November 11, 2013, Tetra Tech personnel installed four (4) boreholes using a drilling rig. Boreholes (BH-1 through BH-4) were installed to vertically define the chloride impact. The borehole locations are shown on Figure 3. The sampling results are summarized in Table 1. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C.

Borehole (BH-1) showed a deeper impact to the soils and detected a chloride high of 9,340 mg/kg at 0'-1', which steadily declined with depth to 848 mg/kg at 79-80' below surface. The areas of AH-2 did show a shallow impact to the soils declining to <20 mg/kg at 4-5' below surface. The chlorides spiked to 2,600 mg/kg at 14-15' and 2,930 mg/kg at 19-20', but declined to 594 mg/kg at 24-25' below surface. The areas of BH-3 and BH-4 did show declining chlorides with depth at approximately 49-50' below surface.

Work Plan

COG proposes to remove impacted material as highlighted (green) in Table 1 and shown in Figure 4. Due to accessibility, equipment and safety concerns, the proposed excavation depth is estimated at 3.0 to 4.0' below surface. Once removed, the excavation bottoms will be capped with clay to prevent further vertical migration. In the areas not accessible, the impacted soil will be deferred until the abandonment of the facility.



Once excavated to the appropriate depths and capped with clay, the excavations will be backfilled with clean soil. All of the excavated soil will be transported to proper disposal.

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 safety concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable.

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.

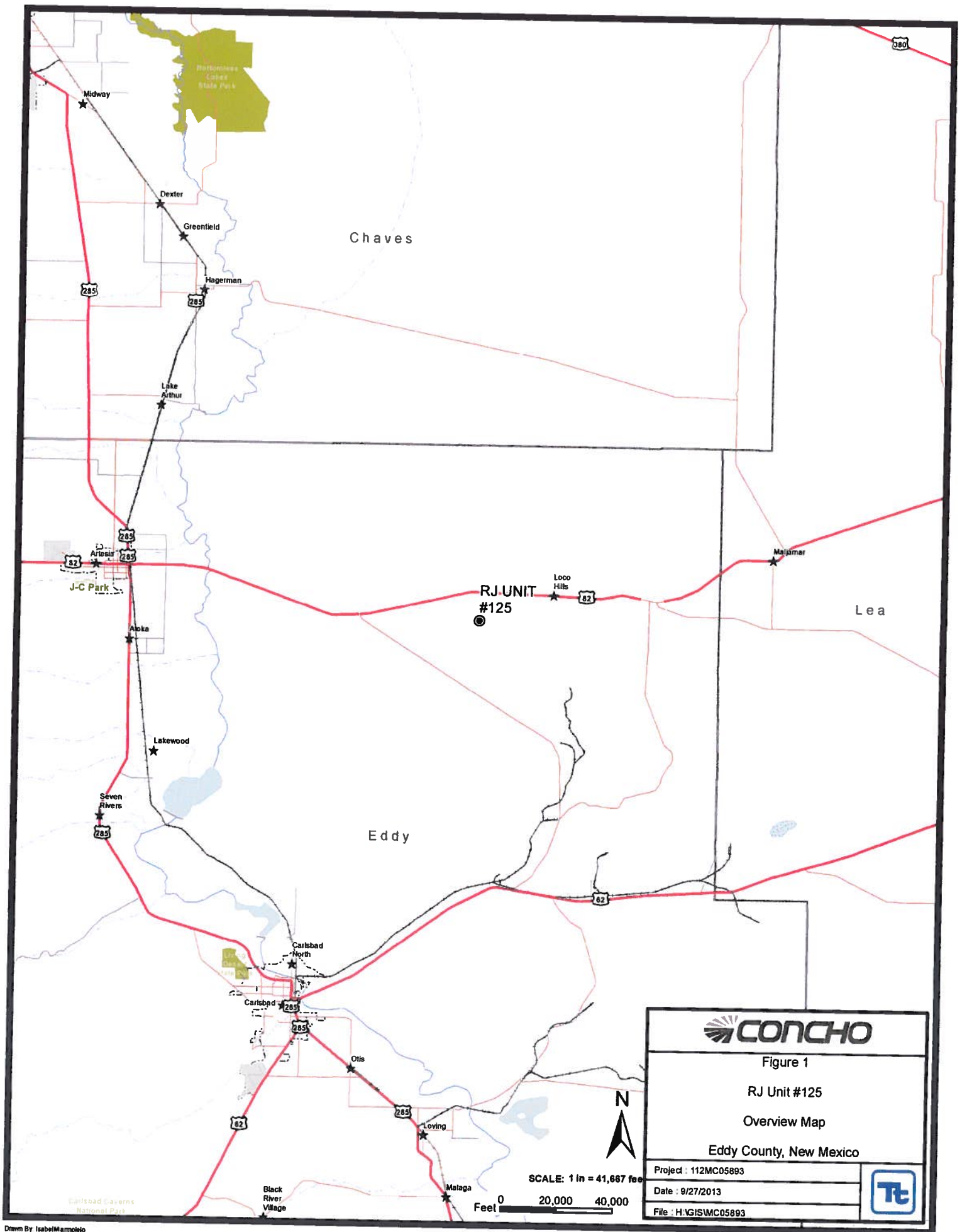
Respectfully submitted,
TETRA TECH

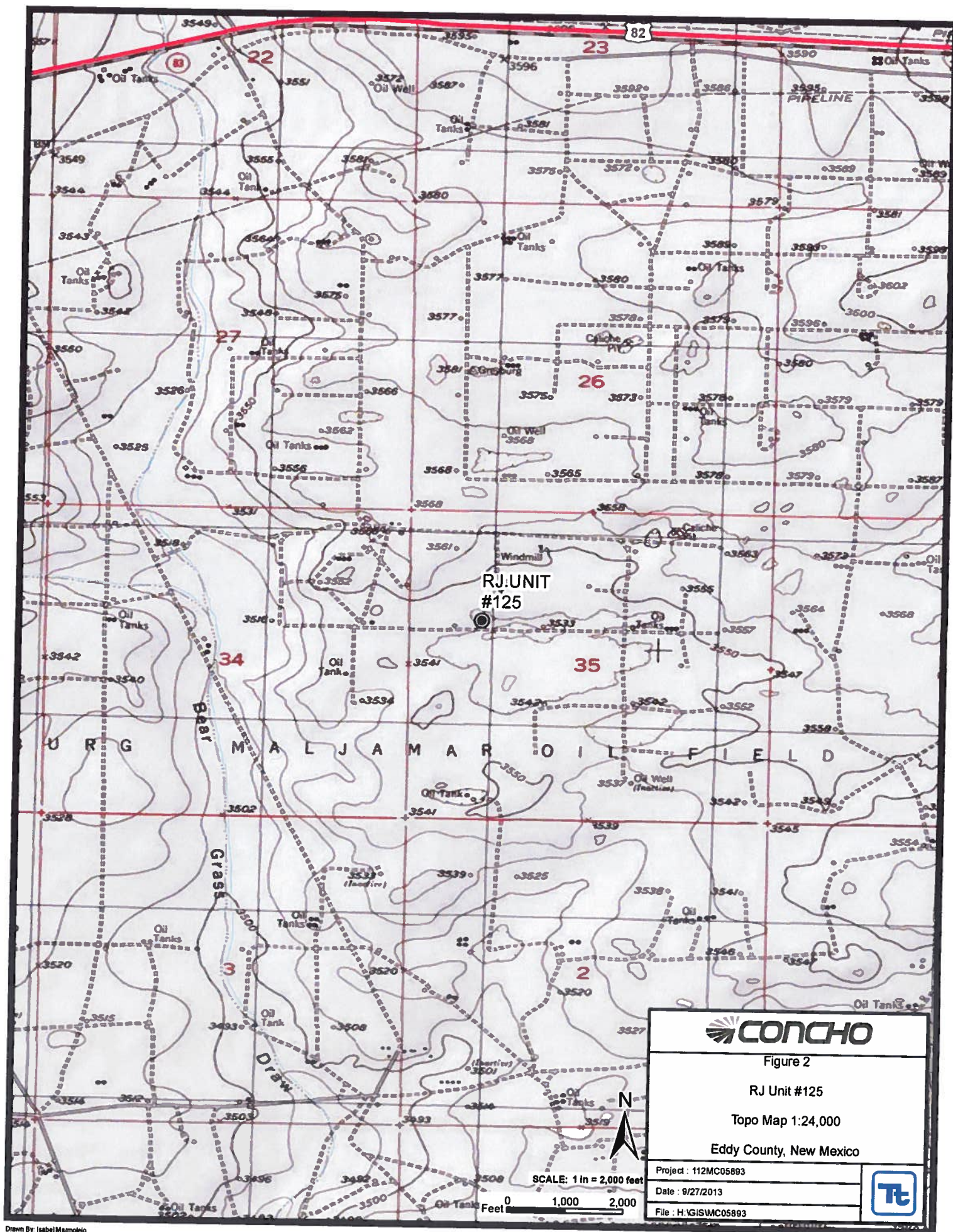
A handwritten signature in black ink, appearing to read 'Ike Tavaréz', written over the company name.

Ike Tavaréz, PG
Senior Project Manager

cc: Rober McNeill – COG
cc: Mike Burton – BLM

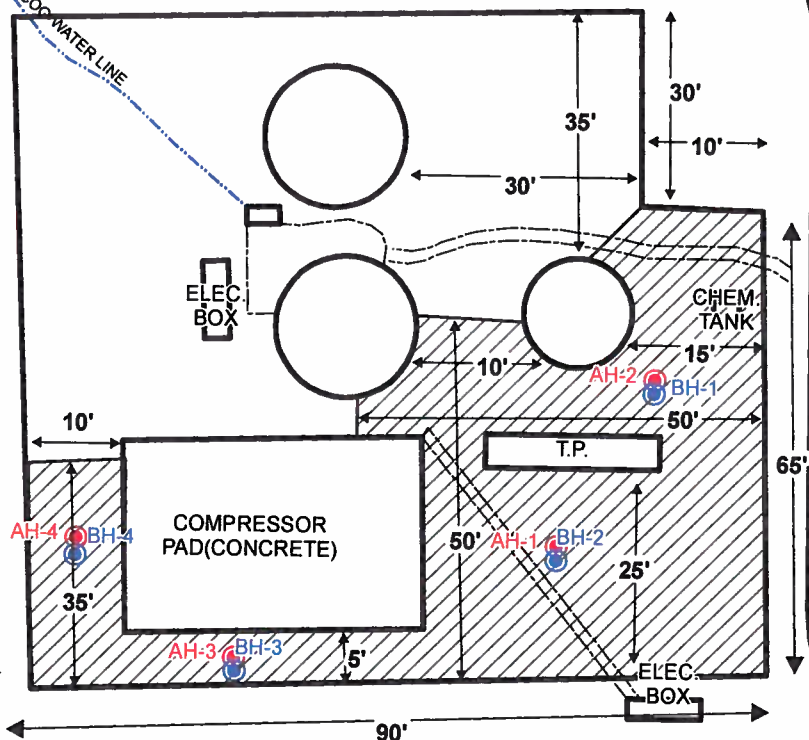
Figures





PASTURE

PAD



LEASE ROAD

LEASE ROAD

PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- ▨ SPILL AREA



SCALE: 1 IN = 29 FEET
Feet 0 10 20



Figure 3

RJ Unit #125

Spill Assessment Map

Eddy County, New Mexico

Project : 112MC05893

Date : 9/27/2013

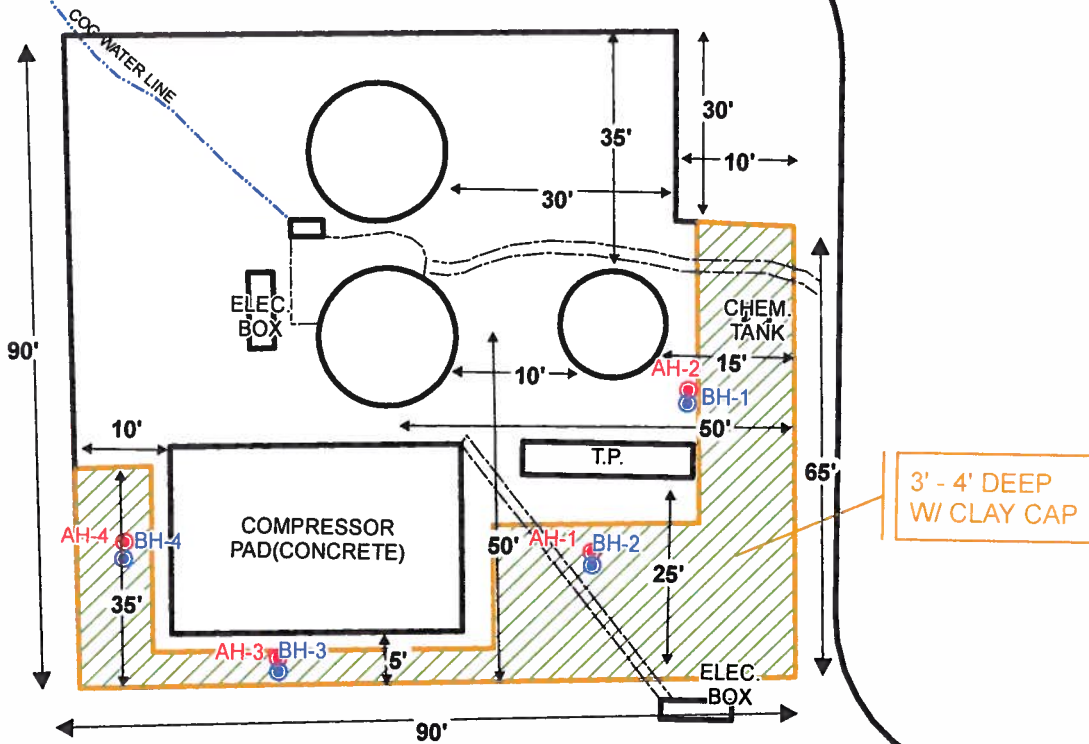
File : H:\GISMC05893





PASTURE

PAD



LEASE ROAD

LEASE ROAD

PASTURE

EXPLANATION

- AUGER HOLE SAMPLE LOCATIONS
- BORE HOLE SAMPLE LOCATIONS
- PROPOSED CLAY CAP
- PROPOSED EXCAVATION AREAS



SCALE: 1 IN = 30 FEET

Feet 0 10 20



Figure 4

RJ Unit #125

Proposed Excavation Areas & Depths Map

Eddy County, New Mexico

Project : 112MC05893

Date : 12/18/2013

File : H:\GIS\MC05893



Tables

Table 1
COG Operating LLC.
RJ Unit #125
Eddy County, New Mexico

[illegible]

Table 1
COG Operating LLC.
RJ Unit #125
Eddy County, New Mexico

[illegible]

Table 1
COG Operating LLC.
RJ Unit #125
Eddy County, New Mexico

[illegible]

Table 1
COG Operating LLC.
RJ Unit #125
Eddy County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	BEB Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenz ene (mg/kg)	Xylene (mg/kg)	Total BTX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-4	8/30/2013	0-1	-	X		<4.0	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	12,400
	"	1-1.5	-	X		-	-	-	-	-	-	-	-	5,090
	"	2-2.5	-	X		-	-	-	-	-	-	-	-	7,760
	"	3-3.5	-	X		-	-	-	-	-	-	-	-	9,000
	"	4-4.5	-	X		-	-	-	-	-	-	-	-	10,300
	"	5-5.5	-	X		-	-	-	-	-	-	-	-	7,270
	"	6-6.5	-	X		-	-	-	-	-	-	-	-	12,400
	"	7-7.5	-	X		-	-	-	-	-	-	-	-	5,950
	"	8-8.5	-	X		-	-	-	-	-	-	-	-	1,600
	"	9-9.5	-	X		-	-	-	-	-	-	-	-	2,650
BH-4	11/6/2013	0-1	-	X		-	-	-	-	-	-	-	-	4,290
	"	2-3	-	X		-	-	-	-	-	-	-	-	7,910
	"	4-5	-	X		-	-	-	-	-	-	-	-	3,980
	"	6-7	-	X		-	-	-	-	-	-	-	-	7,050
	"	9-10	-	X		-	-	-	-	-	-	-	-	10,200
	"	14-15	-	X		-	-	-	-	-	-	-	-	2,830
	"	19-20	-	X		-	-	-	-	-	-	-	-	3,430
	"	24-25	-	X		-	-	-	-	-	-	-	-	4,320
	"	29-30	-	X		-	-	-	-	-	-	-	-	1,890
	"	39-40	-	X		-	-	-	-	-	-	-	-	1,430
	"	49-50	-	X		-	-	-	-	-	-	-	-	730

(-) Not Analyzed
(BEB) Below Excavation Bottom
Proposed Excavation Depths
Proposed Clay Material

Photos

COG Operating LLC
RJ Unit #125
Eddy County, New Mexico
Spill Assessment



TETRA TECH



View Northeast of AH-1



View Northwest of AH-2

COG Operating LLC
RJ Unit #125
Eddy County, New Mexico



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View South of AH-2



View West of AH-3

COG Operating LLC
RJ Unit #125
Eddy County, New Mexico



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View South of AH-4

COG Operating LLC
RJ Unit #125
Eddy County, New Mexico

Borehole Installation



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View Southwest of BH-1



View Southwest of BH-2

COG Operating LLC
RJ Unit #125
Eddy County, New Mexico



TETRA TECH



View Northwest of BH-3



View Southeast of BH-4

Appendix A

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

Name of Company		COG OPERATING LLC	OPERATOR		☒ Initial Report	☐ Final Report
Address		600 West Illinois Avenue, Midland, TX 79701	Contact		Pat Ellis	
Facility Name		RJ Unit #125	Telephone No.		432-230-0077	
			Facility Type		Tank Battery	
Surface Owner			Federal	Mineral Owner		
			Lease No. (API#) 30-015-03783			

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
C	35	17S	29E					Eddy

Latitude 32.79474 Longitude 104.04760

NATURE OF RELEASE

Type of Release	Produced water	Volume of Release	35bbbls	Volume Recovered	32bbbls
Source of Release	Discharge water line	Date and Hour of Occurrence	08-09-2013	Date and Hour of Discovery	08-09-2013 11:00am
Was Immediate Notice Given?	☒ Yes ☐ No ☐ Not Required	If YES, To Whom?			
By Whom?	Michelle Mullins	Mike Bratcher - NMOCD			
Was a Watercourse Reached?	☐ Yes ☒ No	Date and Hour	08-12-2013 1:38pm	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Valve washed out on the discharge line. Removed discharge line going to the remover pump.

Describe Area Affected and Cleanup Action Taken.*

Initially 35bbbls of produced water were released from a discharge water line we were able to recover 32bbbls with a vacuum truck. All free fluid has been recovered. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a work plan to the NMOCD for approval prior to any significant remediation work.

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.

OIL CONSERVATION DIVISION

Signature: 

Printed Name: Robert Grubbs Jr.

Title: Senior Environmental Coordinator

E-mail Address: rgrubbs@concho.com

Date: 08-13-2013 Phone: 432-661-6601

Approved by District Supervisor:

Approval Date:

Expiration Date:

Conditions of Approval:

Attached ☐

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
COG-RJ Unit #125
Eddy County, New Mexico

16 South			28 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

16 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14 220 dry	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

16 South			30 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

17 South			28 East		
6	5	4	3	2 28	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 45	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South			29 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 76	23	24
30	29 210 208'	28	27	26	25
31	32	33	34	35 SITE 153	36

17 South			30 East		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 80	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South			28 East		
6	5	4	3	2	1
7	49	8 81 69	9	10	11
18	17	16	15	14	13
19	20	21	22	23	24
30	137	29	28	27	26
31	32	33	34	35	36

18 South			29 East		
6	5	4	3	2	1
7	8	9	10 95	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

18 South			30 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

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System

Appendix C

Summary Report

Ike Tavaréz
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: September 18, 2013

Work Order: 13090441



Project Location: Eddy Co., NM
Project Name: COG/RJU #125
Project Number: TBD

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
340980	AH-1 0-1'	soil	2013-08-30	00:00	2013-09-04
340981	AH-1 1-1.5'	soil	2013-08-30	00:00	2013-09-04
340982	AH-1 2-2.5'	soil	2013-08-30	00:00	2013-09-04
340983	AH-1 3-3.5'	soil	2013-08-30	00:00	2013-09-04
340984	AH-1 4-4.5'	soil	2013-08-30	00:00	2013-09-04
340985	AH-1 5-5.5'	soil	2013-08-30	00:00	2013-09-04
340986	AH-1 6-6.5'	soil	2013-08-30	00:00	2013-09-04
340987	AH-1 7-7.5'	soil	2013-08-30	00:00	2013-09-04
340988	AH-1 8-8.5'	soil	2013-08-30	00:00	2013-09-04
340989	AH-1 9-9.5'	soil	2013-08-30	00:00	2013-09-04
340990	AH-2 0-1'	soil	2013-08-30	00:00	2013-09-04
340991	AH-2 1-1.5'	soil	2013-08-30	00:00	2013-09-04
340992	AH-2 2-2.5'	soil	2013-08-30	00:00	2013-09-04
340993	AH-2 3-3.5'	soil	2013-08-30	00:00	2013-09-04
340994	AH-2 4-4.5'	soil	2013-08-30	00:00	2013-09-04
340995	AH-2 5-5.5'	soil	2013-08-30	00:00	2013-09-04
340996	AH-2 6-6.5'	soil	2013-08-30	00:00	2013-09-04
340997	AH-2 7-7.5'	soil	2013-08-30	00:00	2013-09-04
340998	AH-2 8-8.5'	soil	2013-08-30	00:00	2013-09-04
340999	AH-2 9-9.5'	soil	2013-08-30	00:00	2013-09-04
341000	AH-3 0-1'	soil	2013-08-30	00:00	2013-09-04
341001	AH-3 1-1.5'	soil	2013-08-30	00:00	2013-09-04
341002	AH-3 2-2.5'	soil	2013-08-30	00:00	2013-09-04
341003	AH-3 3-3.5'	soil	2013-08-30	00:00	2013-09-04
341004	AH-3 4-4.5'	soil	2013-08-30	00:00	2013-09-04
341005	AH-3 5-5.5'	soil	2013-08-30	00:00	2013-09-04
341006	AH-3 6-6.5'	soil	2013-08-30	00:00	2013-09-04
341007	AH-3 7-7.5'	soil	2013-08-30	00:00	2013-09-04
341008	AH-3 8-8.5'	soil	2013-08-30	00:00	2013-09-04
341009	AH-3 9-9.5'	soil	2013-08-30	00:00	2013-09-04

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
341010	AH-4 0-1'	soil	2013-08-30	00:00	2013-09-04
341011	AH-4 1-1.5'	soil	2013-08-30	00:00	2013-09-04
341012	AH-4 2-2.5'	soil	2013-08-30	00:00	2013-09-04
341013	AH-4 3-3.5'	soil	2013-08-30	00:00	2013-09-04
341014	AH-4 4-4.5'	soil	2013-08-30	00:00	2013-09-04
341015	AH-4 5-5.5'	soil	2013-08-30	00:00	2013-09-04
341016	AH-4 6-6.5'	soil	2013-08-30	00:00	2013-09-04
341017	AH-4 7-7.5'	soil	2013-08-30	00:00	2013-09-04
341018	AH-4 8-8.5'	soil	2013-08-30	00:00	2013-09-04
341019	AH-4 9-9.5'	soil	2013-08-30	00:00	2013-09-04

Sample - Field Code	BTX				TPH DRO - NEW	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
340980 - AH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Q _n
340990 - AH-2 0-1'	<0.0200 ¹	<0.0200	<0.0200	0.0935	6500	<20.0 Q _n
340991 - AH-2 1-1.5'					71.3	<4.00 Q _n
341000 - AH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	64.4	<4.00 Q _n
341010 - AH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<4.00 Q _n

Sample: 340980 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		11800	mg/Kg	4

Sample: 340981 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		7980	mg/Kg	4

Sample: 340982 - AH-1 2-2.5'

Param	Flag	Result	Units	RL
Chloride		787	mg/Kg	4

Sample: 340983 - AH-1 3-3.5'

Param	Flag	Result	Units	RL
Chloride		573	mg/Kg	4

¹ Dilution due to hydrocarbons.

Sample: 340984 - AH-1 4-4.5'

Param	Flag	Result	Units	RL
Chloride		801	mg/Kg	4

Sample: 340985 - AH-1 5-5.5'

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4

Sample: 340986 - AH-1 6-6.5'

Param	Flag	Result	Units	RL
Chloride		4080	mg/Kg	4

Sample: 340987 - AH-1 7-7.5'

Param	Flag	Result	Units	RL
Chloride		2310	mg/Kg	4

Sample: 340988 - AH-1 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4

Sample: 340989 - AH-1 9-9.5'

Param	Flag	Result	Units	RL
Chloride		1190	mg/Kg	4

Sample: 340990 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		4780	mg/Kg	4

Sample: 340991 - AH-2 1-1.5'

Param	Flag	Result	Units	RL
Chloride		2900	mg/Kg	4

Sample: 340992 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		3470	mg/Kg	4

Sample: 340993 - AH-2 3-3.5'

Param	Flag	Result	Units	RL
Chloride		3770	mg/Kg	4

Sample: 340994 - AH-2 4-4.5'

Param	Flag	Result	Units	RL
Chloride		5740	mg/Kg	4

Sample: 340995 - AH-2 5-5.5'

Param	Flag	Result	Units	RL
Chloride		7060	mg/Kg	4

Sample: 340996 - AH-2 6-6.5'

Param	Flag	Result	Units	RL
Chloride		7970	mg/Kg	4

Sample: 340997 - AH-2 7-7.5'

Param	Flag	Result	Units	RL
Chloride		4830	mg/Kg	4

Sample: 340998 - AH-2 8-8.5'

Param	Flag	Result	Units	RL
Chloride		4240	mg/Kg	4

Sample: 340999 - AH-2 9-9.5'

Param	Flag	Result	Units	RL
Chloride		4120	mg/Kg	4

Sample: 341000 - AH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		463	mg/Kg	4

Sample: 341001 - AH-3 1-1.5'

Param	Flag	Result	Units	RL
Chloride		39.0	mg/Kg	4

Sample: 341002 - AH-3 2-2.5'

Param	Flag	Result	Units	RL
Chloride		974	mg/Kg	4

Sample: 341003 - AH-3 3-3.5'

Param	Flag	Result	Units	RL
Chloride		7910	mg/Kg	4

Sample: 341004 - AH-3 4-4.5'

Param	Flag	Result	Units	RL
Chloride		8330	mg/Kg	4

Sample: 341005 - AH-3 5-5.5'

Param	Flag	Result	Units	RL
Chloride		112	mg/Kg	4

Sample: 341006 - AH-3 6-6.5'

Param	Flag	Result	Units	RL
Chloride		112	mg/Kg	4

Sample: 341007 - AH-3 7-7.5'

Param	Flag	Result	Units	RL
Chloride		600	mg/Kg	4

Sample: 341008 - AH-3 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1720	mg/Kg	4

Sample: 341009 - AH-3 9-9.5'

Param	Flag	Result	Units	RL
Chloride		1050	mg/Kg	4

Sample: 341010 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		12400	mg/Kg	4

Sample: 341011 - AH-4 1-1.5'

Param	Flag	Result	Units	RL
Chloride		5090	mg/Kg	4

Sample: 341012 - AH-4 2-2.5'

Param	Flag	Result	Units	RL
Chloride		7760	mg/Kg	4

Sample: 341013 - AH-4 3-3.5'

Param	Flag	Result	Units	RL
Chloride		9000	mg/Kg	4

Sample: 341014 - AH-4 4-4.5'

Param	Flag	Result	Units	RL
Chloride		10300	mg/Kg	4

Sample: 341015 - AH-4 5-5.5'

Param	Flag	Result	Units	RL
Chloride		7270	mg/Kg	4

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Sample: 341016 - AH-4 6-6.5'

Param	Flag	Result	Units	RL
Chloride		12400	mg/Kg	4

Sample: 341017 - AH-4 7-7.5'

Param	Flag	Result	Units	RL
Chloride		5950	mg/Kg	4

Sample: 341018 - AH-4 8-8.5'

Param	Flag	Result	Units	RL
Chloride		1600	mg/Kg	4

Sample: 341019 - AH-4 9-9.5'

Param	Flag	Result	Units	RL
Chloride		2650	mg/Kg	4

Summary Report

Ike Tavaréz
Tetra Tech
1910 N. Big Spring Street
Midland, TX 79705

Report Date: November 18, 2013

Work Order: 13110805



Project Location: Eddy Co., NM
Project Name: COG/RJU #125
Project Number: 112MC05893

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
346108	BH-1 0-1'	soil	2013-11-06	00:00	2013-11-08
346109	BH-1 2-3'	soil	2013-11-06	00:00	2013-11-08
346110	BH-1 4-5'	soil	2013-11-06	00:00	2013-11-08
346111	BH-1 6-7'	soil	2013-11-06	00:00	2013-11-08
346112	BH-1 9-10'	soil	2013-11-06	00:00	2013-11-08
346113	BH-1 14-15'	soil	2013-11-06	00:00	2013-11-08
346114	BH-1 19-20'	soil	2013-11-06	00:00	2013-11-08
346115	BH-1 24-25'	soil	2013-11-06	00:00	2013-11-08
346116	BH-1 29-30'	soil	2013-11-06	00:00	2013-11-08
346117	BH-1 39-40'	soil	2013-11-06	00:00	2013-11-08
346118	BH-1 49-50'	soil	2013-11-06	00:00	2013-11-08
346119	BH-1 59-60'	soil	2013-11-06	00:00	2013-11-08
346120	BH-1 69-70'	soil	2013-11-06	00:00	2013-11-08
346121	BH-1 79-80'	soil	2013-11-06	00:00	2013-11-08
346122	BH-2 0-1'	soil	2013-11-07	00:00	2013-11-08
346123	BH-2 2-3'	soil	2013-11-07	00:00	2013-11-08
346124	BH-2 4-5'	soil	2013-11-07	00:00	2013-11-08
346125	BH-2 6-7'	soil	2013-11-07	00:00	2013-11-08
346126	BH-2 9-10'	soil	2013-11-07	00:00	2013-11-08
346127	BH-2 14-15'	soil	2013-11-07	00:00	2013-11-08
346128	BH-2 19-20'	soil	2013-11-07	00:00	2013-11-08
346129	BH-2 24-25'	soil	2013-11-07	00:00	2013-11-08
346130	BH-3 0-1'	soil	2013-11-06	00:00	2013-11-08
346131	BH-3 2-3'	soil	2013-11-06	00:00	2013-11-08
346132	BH-3 4-5'	soil	2013-11-06	00:00	2013-11-08
346133	BH-3 6-7'	soil	2013-11-06	00:00	2013-11-08
346134	BH-3 9-10'	soil	2013-11-06	00:00	2013-11-08
346135	BH-3 24-25'	soil	2013-11-06	00:00	2013-11-08
346136	BH-3 29-30'	soil	2013-11-06	00:00	2013-11-08
346137	BH-3 39-40'	soil	2013-11-06	00:00	2013-11-08

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This is only a summary. Please, refer to the complete report package for quality control data.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
346138	BH-3 49-50'	soil	2013-11-06	00:00	2013-11-08
346139	BH-4 0-1'	soil	2013-11-06	00:00	2013-11-08
346140	BH-4 2-3'	soil	2013-11-06	00:00	2013-11-08
346141	BH-4 4-5'	soil	2013-11-06	00:00	2013-11-08
346142	BH-4 6-7'	soil	2013-11-06	00:00	2013-11-08
346143	BH-4 9-10'	soil	2013-11-06	00:00	2013-11-08
346144	BH-4 14-15'	soil	2013-11-06	00:00	2013-11-08
346145	BH-4 19-20'	soil	2013-11-06	00:00	2013-11-08
346146	BH-4 24-25'	soil	2013-11-06	00:00	2013-11-08
346147	BH-4 29-30'	soil	2013-11-06	00:00	2013-11-08
346148	BH-4 39-40'	soil	2013-11-06	00:00	2013-11-08
346149	BH-4 49-50'	soil	2013-11-06	00:00	2013-11-08
346150	BH-3 14-15'	soil	2013-11-06	00:00	2013-11-08
346151	BH-3 19-20'	soil	2013-11-06	00:00	2013-11-08
346152	BH-3 59-60'	soil	2013-11-06	00:00	2013-11-08

Sample: 346108 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		9340	mg/Kg	4

Sample: 346109 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		8920	mg/Kg	4

Sample: 346110 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		1810	mg/Kg	4

Sample: 346111 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		4150	mg/Kg	4

Sample: 346112 - BH-1 9-10'

continued ...

sample 346112 continued ...

Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		2200	mg/Kg	4

Sample: 346113 - BH-1 14-15'

Param	Flag	Result	Units	RL
Chloride		6720	mg/Kg	4

Sample: 346114 - BH-1 19-20'

Param	Flag	Result	Units	RL
Chloride		4400	mg/Kg	4

Sample: 346115 - BH-1 24-25'

Param	Flag	Result	Units	RL
Chloride		3380	mg/Kg	4

Sample: 346116 - BH-1 29-30'

Param	Flag	Result	Units	RL
Chloride		3980	mg/Kg	4

Sample: 346117 - BH-1 39-40'

Param	Flag	Result	Units	RL
Chloride		3610	mg/Kg	4

Sample: 346118 - BH-1 49-50'

Param	Flag	Result	Units	RL
Chloride		2170	mg/Kg	4

Sample: 346119 - BH-1 59-60'

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Param	Flag	Result	Units	RL
Chloride		1270	mg/Kg	4

Sample: 346120 - BH-1 69-70'

Param	Flag	Result	Units	RL
Chloride		1460	mg/Kg	4

Sample: 346121 - BH-1 79-80'

Param	Flag	Result	Units	RL
Chloride		848	mg/Kg	4

Sample: 346122 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		3000	mg/Kg	4

Sample: 346123 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		1620	mg/Kg	4

Sample: 346124 - BH-2 4-5'

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 346125 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		180	mg/Kg	4

Sample: 346126 - BH-2 9-10'

Param	Flag	Result	Units	RL
Chloride		87.7	mg/Kg	4

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Sample: 346127 - BH-2 14-15'

Param	Flag	Result	Units	RL
Chloride		2600	mg/Kg	4

Sample: 346128 - BH-2 19-20'

Param	Flag	Result	Units	RL
Chloride		2930	mg/Kg	4

Sample: 346129 - BH-2 24-25'

Param	Flag	Result	Units	RL
Chloride		594	mg/Kg	4

Sample: 346130 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		336	mg/Kg	4

Sample: 346131 - BH-3 2-3'

Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4

Sample: 346132 - BH-3 4-5'

Param	Flag	Result	Units	RL
Chloride		398	mg/Kg	4

Sample: 346133 - BH-3 6-7'

Param	Flag	Result	Units	RL
Chloride		3360	mg/Kg	4

Sample: 346134 - BH-3 9-10'

Param	Flag	Result	Units	RL
Chloride		7570	mg/Kg	4

Sample: 346135 - BH-3 24-25'

Param	Flag	Result	Units	RL
Chloride		1930	mg/Kg	4

Sample: 346136 - BH-3 29-30'

Param	Flag	Result	Units	RL
Chloride		1850	mg/Kg	4

Sample: 346137 - BH-3 39-40'

Param	Flag	Result	Units	RL
Chloride		1230	mg/Kg	4

Sample: 346138 - BH-3 49-50'

Param	Flag	Result	Units	RL
Chloride		719	mg/Kg	4

Sample: 346139 - BH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		4290	mg/Kg	4

Sample: 346140 - BH-4 2-3'

Param	Flag	Result	Units	RL
Chloride		7610	mg/Kg	4

Sample: 346141 - BH-4 4-5'

Param	Flag	Result	Units	RL
Chloride		3980	mg/Kg	4

Sample: 346142 - BH-4 6-7'

Param	Flag	Result	Units	RL
Chloride		7050	mg/Kg	4

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Sample: 346143 - BH-4 9-10'

Param	Flag	Result	Units	RL
Chloride		10200	mg/Kg	4

Sample: 346144 - BH-4 14-15'

Param	Flag	Result	Units	RL
Chloride		2830	mg/Kg	4

Sample: 346145 - BH-4 19-20'

Param	Flag	Result	Units	RL
Chloride		3430	mg/Kg	4

Sample: 346146 - BH-4 24-25'

Param	Flag	Result	Units	RL
Chloride		4320	mg/Kg	4

Sample: 346147 - BH-4 29-30'

Param	Flag	Result	Units	RL
Chloride		1890	mg/Kg	4

Sample: 346148 - BH-4 39-40'

Param	Flag	Result	Units	RL
Chloride		1430	mg/Kg	4

Sample: 346149 - BH-4 49-50'

Param	Flag	Result	Units	RL
Chloride		730	mg/Kg	4

Sample: 346150 - BH-3 14-15'

Param	Flag	Result	Units	RL
Chloride		2250	mg/Kg	4

Sample: 346151 - BH-3 19-20'

Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4

Sample: 346152 - BH-3 59-60'

Param	Flag	Result	Units	RL
Chloride		218	mg/Kg	4