

## Bratcher, Mike, EMNRD

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**From:** Tavarez, Ike [Ike.Tavarez@tetrattech.com]  
**Sent:** Wednesday, October 07, 2009 12:41 PM  
**To:** Bratcher, Mike, EMNRD  
**Cc:** Pat Ellis; Terry Gregston (terry\_gregston@nm.blm.gov)  
**Subject:** COG - RJU #110 Work Plan  
**Attachments:** COG - RJU #110, Work Plan.pdf

Mike,

Please find enclosed the COG - RJU #110, work plan located in Eddy County, New Mexico. COG is currently scheduling to implement the work plan next week. Please review and call me if you have any comments or questions on the work plan, thanks

**Ike Tavarez, PG** - Senior Project Manager

Man: 432 682 1358 | Fax: 432 682 3946 | Cell: 432 425 3476

[Ike.Tavarez@tetrattech.com](mailto:Ike.Tavarez@tetrattech.com)

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**TETRA TECH**

October 6, 2009

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
1301 West Grand Avenue  
Artesia, NM 88210

**Re: Work Plan for the COG Operating LLC., RJU #110, Unit I, Section 27,  
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 RJU #110 located in Unit I, Section 27, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.80359°, W 104.05712°. 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 4, 2009. Approximately 200 barrels of produced water was released from a hole on a 2-inch injection line. The 2 inch poly line was repaired with new connections. Vacuum trucks were utilized to recover 150 barrels of standing fluids. The initial C-141 is enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 27. An abandoned water well was located in Section 35 and measured a total depth of 153' (dry). According to the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), one well is located in Section 22 (Bear Grass Draw) with a depth to water of 79.0' below surface. In addition, a well located in Section 29 was reported at 210 below surface. According to the NMOCD groundwater map the average depth to groundwater in this area is approximately 150' below surface. The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3) well report 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

Tetra Tech

1910 North Big Spring Midland TX 79705

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**TETRA TECH**

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 Results**

On August 25, 2009, Tetra Tech personnel inspected the spill area, which measured approximately 35' x 140' along the COG pipeline and area southwest measuring approximately 35' x 50'. Prior to sampling, COG had excavated 1.0' to 2.0' of material from the site and hauled to proper disposal. In order to complete delineation of the chlorides, Tetra Tech personnel supervised the installation of ten (10) boreholes (SB-1 through SB-10) utilizing an air rotary rig. The borehole locations are shown on Figure 3.

The boreholes were extended to a maximum depth of 20 to 40 feet bgs with samples collected at 2 to 3 feet intervals for the first 10 feet and 5 feet intervals thereafter. 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 results of the sampling are summarized in Table 1.

Referring to Table 1, none of the selected samples exceeded the TPH and BTEX RRAL. Elevated chloride concentrations were detected in all of the auger holes, with the exception of SB-4 and SB-10. The chlorides concentrations declined with depth and declined below 1,000 mg/kg at depths ranging 10.0' to 30.0' below surface.

#### **Work Plan**

Based on the results, Tetra Tech proposes to excavate the impacted soils and hauled to proper disposal. In addition, the 35' x 50' area will be capped (lined) with a 40 mil plastic liner. Once the areas are excavated to the appropriate depths, the excavation will be backfilled with clean soil. The liner will be installed at a depth of 4.0' below surface. The proposed excavation depths and liner installation areas are shown on Figure 4.

If you require any additional information or have any questions or comments concerning this work plan report, please call at (432) 682-4559.

Respectfully submitted,  
TETRA TECH



Ike Tavarez, P.G.  
Senior Project Manager

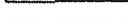
cc: Pat Ellis – COG

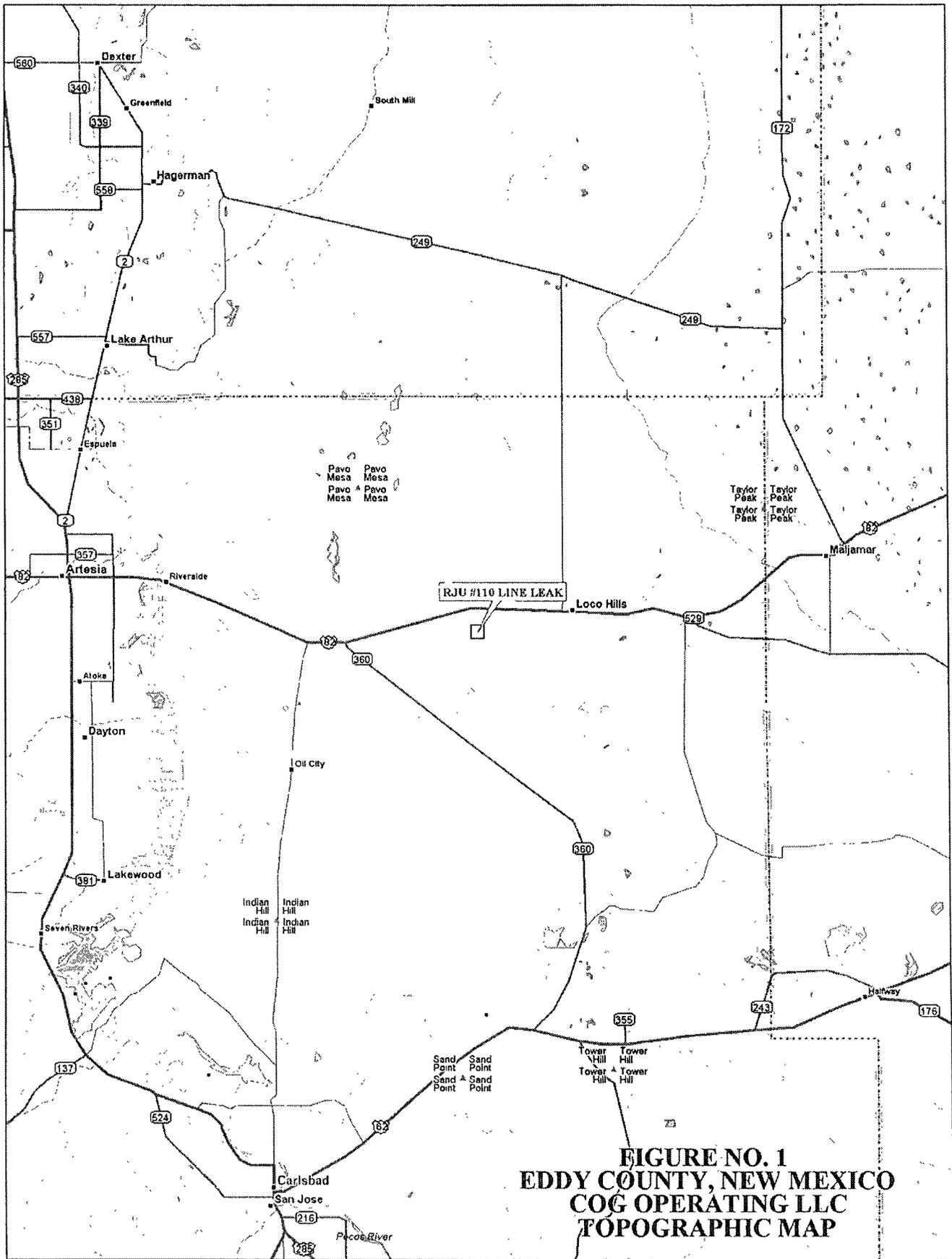




Table 1  
 COG OPERATING LLC  
 RJU #110  
 Eddy County, New Mexico

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
SB-7	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	2,150
	8/26/2009	2-3'	X									2,920
	8/26/2009	4-5'	X									13,400
	8/26/2009	6-7'	X									9,280
	8/26/2009	10-11'	X									697
	8/26/2009	15-16'	X									<200
	8/26/2009	20-21'	X									201
SB-8	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	-	-	-	-	<200
	8/26/2009	2-3'	X		-	-	-	-	-	-	-	1,310
	8/26/2009	4-5'	X		-	-	-	-	-	-	-	2,950
	8/26/2009	6-7'	X		-	-	-	-	-	-	-	7,150
	8/26/2009	10-11'	X		-	-	-	-	-	-	-	5,970
	8/26/2009	15-16'	X		-	-	-	-	-	-	-	1,490
	8/26/2009	20-21'	X		-	-	-	-	-	-	-	1,340
	8/26/2009	25-26'	X		-	-	-	-	-	-	-	331
8/26/2009	30-31'	X		-	-	-	-	-	-	-	210	
SB-9	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	746
	8/26/2009	2-3'	X		-	-	-	-	-	-	-	1,440
	8/26/2009	4-5'	X		-	-	-	-	-	-	-	8,580
	8/26/2009	6-7'	X		-	-	-	-	-	-	-	7,540
	8/26/2009	10-11'	X		-	-	-	-	-	-	-	1,350
	8/26/2009	15-16'	X		-	-	-	-	-	-	-	407
	8/26/2009	20-21'	X		-	-	-	-	-	-	-	<200
SB-10	8/26/2009	0-1'	X		<50.0	<1.00	<50.0	-	-	-	-	<200
	8/26/2009	2-3'	X		-	-	-	-	-	-	-	<200
	8/26/2009	4-5'	X		-	-	-	-	-	-	-	<200
	8/26/2009	6-7'	X		-	-	-	-	-	-	-	<200
	8/26/2009	10-11'	X		-	-	-	-	-	-	-	<200
	8/26/2009	15-16'	X		-	-	-	-	-	-	-	<200
	8/26/2009	20-21'	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed  
 Proposed Excavation Depths  
 Liner

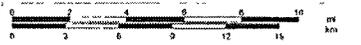


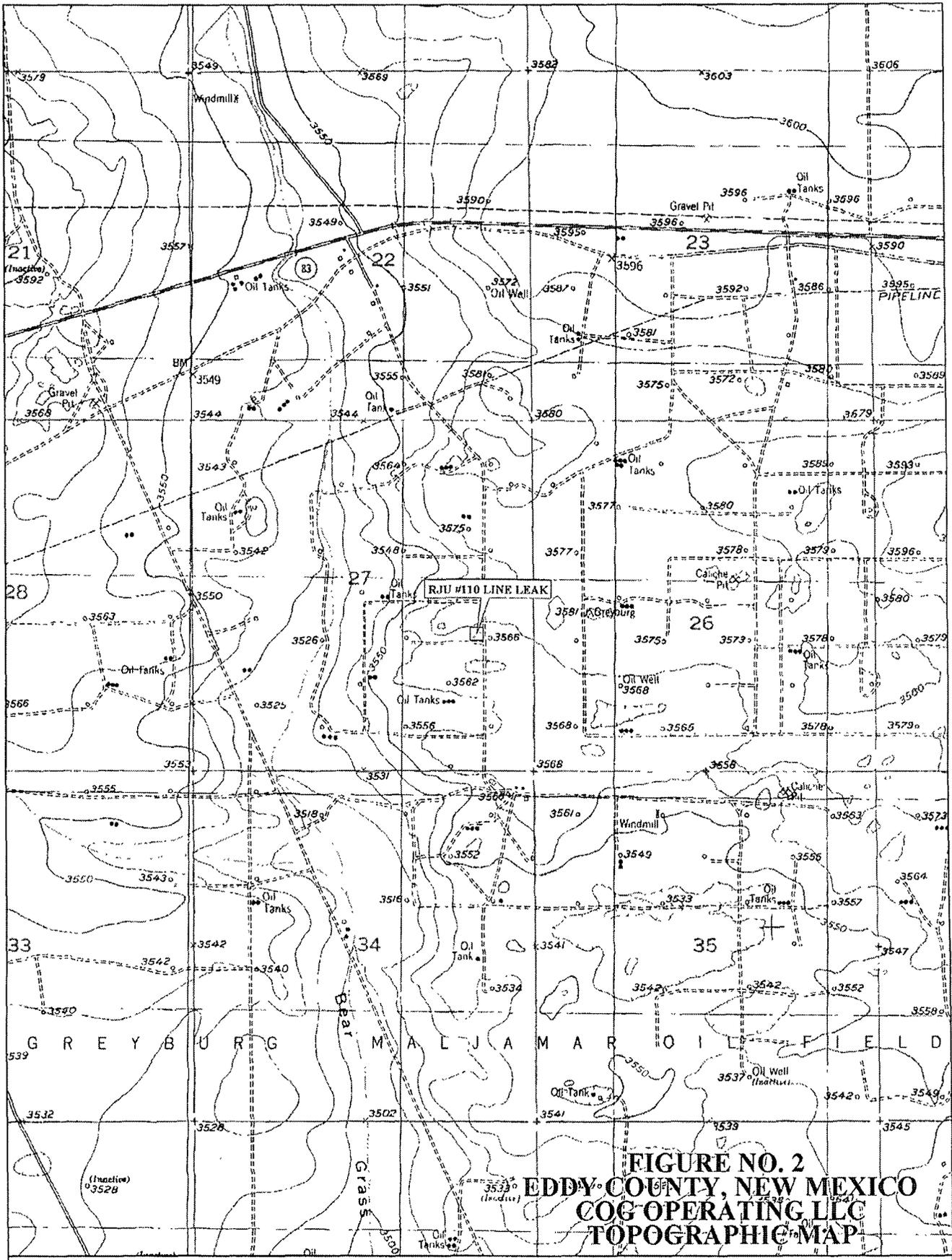
**FIGURE NO. 1  
EDDY COUNTY, NEW MEXICO  
COG OPERATING LLC  
TOPOGRAPHIC MAP**



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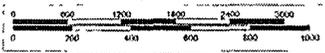
Scale 1 : 400,000  
1" = 6.31 mi

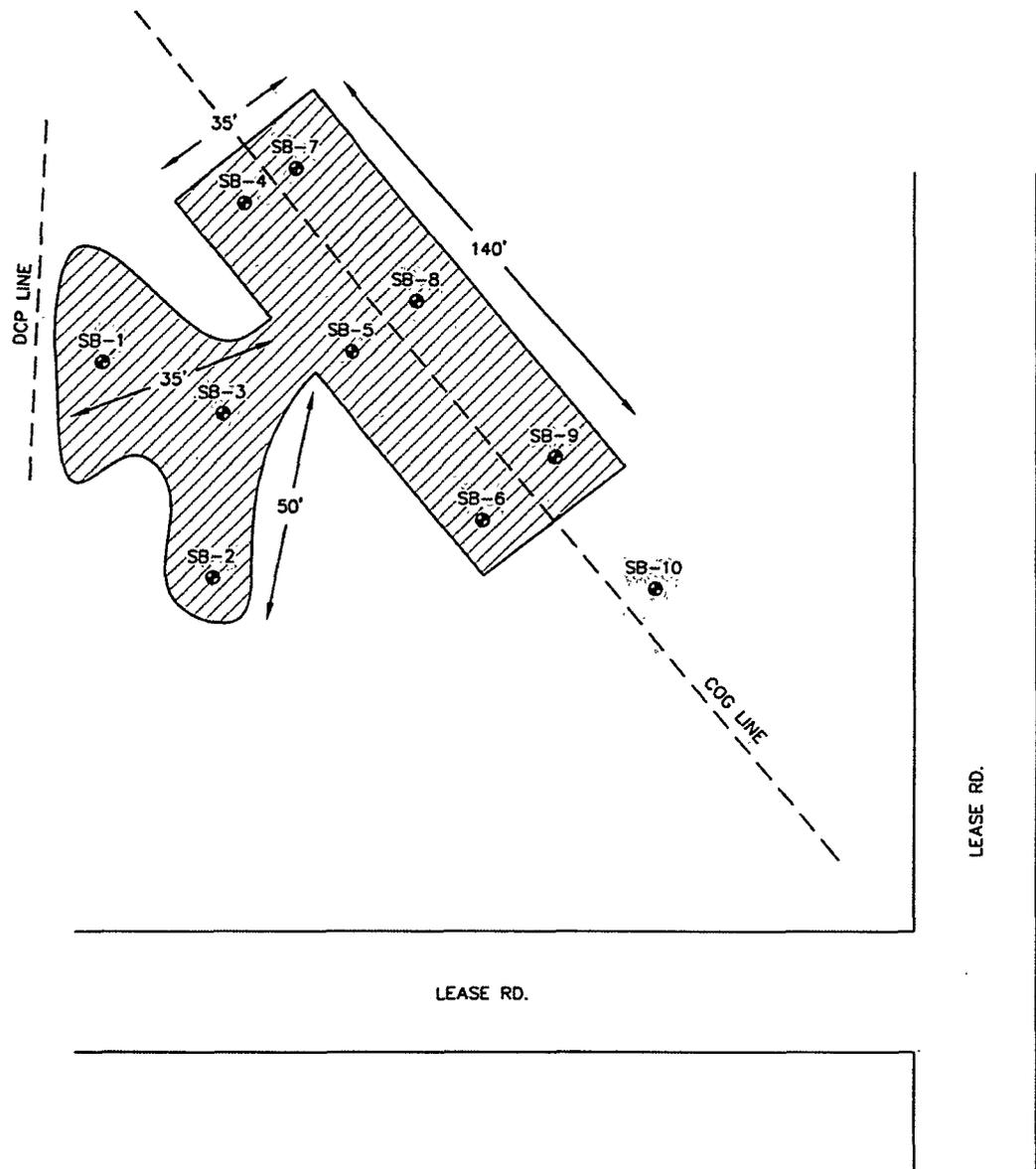




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Scale 1 : 24,000  
1" = 2000 ft



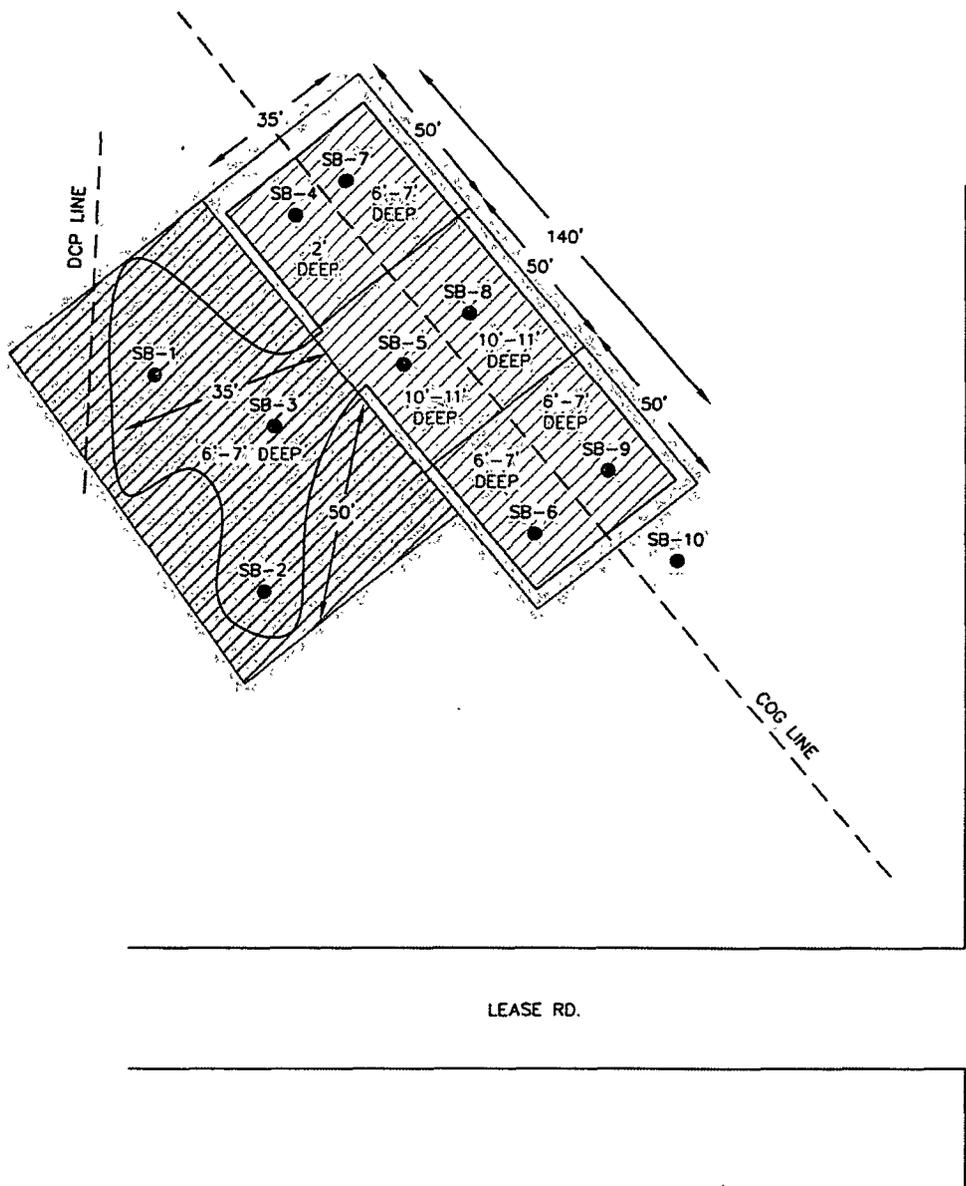


▨ SPILL AREA  
● SAMPLE LOCATIONS

NOT TO SCALE

DATE:  
9/9/09  
DWNL BY:  
JJ  
FILE:  
S:\COG\8400279  
RJU UNIT #110

FIGURE NO. 3	
EDDY COUNTY, NEW MEXICO	
COG OPERATING LLC	
RJU UNIT #110	
TETRA TECH, INC. MIDLAND, TEXAS	



-  SPILL AREA
-  PROPOSED EXCAVATION AREAS & DEPTHS
-  PROPOSED LINER
-  SAMPLE LOCATIONS

DATE:  
9/9/09  
DWN. BY:  
JJ  
FILE:  
H:\0001\6400279  
RJU UNIT #110

NOT TO SCALE

FIGURE NO. 4
EDDY COUNTY, NEW MEXICO
COG OPERATING LLC
RJU UNIT #110
TETRA TECH, INC. MIDLAND, TEXAS

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	COG OPERATING LLC	Contact	Kanicia Carrillo
Address	550 W. Texas, Suite 100 Midland, TX 79701	Telephone No.	432-685-4332
Facility Name	- RJ Unit #110	Facility Type-	Battery

Surface Owner	BLM	Mineral Owner		Lease No.	30-015-03152
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**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	27	17S	29E	1980	South	660	East	Eddy

Latitude \_\_\_\_\_ Longitude \_\_\_\_\_

**NATURE OF RELEASE**

Type of Release-Produced Water	Volume of Release-200bbls	Volume Recovered-150
Source of Release- Injection line	Date and Hour of Occurrence- 8/4/09- 4:00 pm	Date and Hour of Discovery 8/4/09-5:00pm
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Mike Bracher NMOCD District 2.Eddy Co. Terry Gregston BLM	
By Whom? Pat Ellis	Date and Hour 8/4/09 @ 5:08pm	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\*  
Injection line release. Picked up water and repaired injection line.

Describe Area Affected and Cleanup Action Taken.\*  
Release occurred in the pasture area. Tetra Tech will sample the spill site area to delineate any possible contamination from the release and we will present a remediation work plan to the NMOCD for your 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.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: Kanicia Carrillo	Approved by District Supervisor:	
Title: Regulatory Analyst	Approval Date:	Expiration Date:
E-mail Address: kcarrillo@conchoresources.com	Conditions of Approval:	Attached <input type="checkbox"/>
Date: 08/05/09 Phone: 432-685-4332		

\* Attach Additional Sheets If Necessary

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**COG - RJU Unit #110**  
**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	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	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 29 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 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

**18 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

**18 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	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

- 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 Field water level
- 143 NMOCD Groundwater map well location

