State of New Mexico Energy Minerals and Natural Resources

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

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

30-015	30-015-029% Release Notification and Corrective Action												
Closu	re For	3 relea	ses			OPERAT	OR		🗌 Initia	l Report	$\boxtimes$	Final R	leport
Name of Co	mpany C	OG OPERA	TING LLC				nicia Carrillo	20					
		as, Suite 130 orth Central	· · · · · · · · · · · · · · · · · · ·	1X /9/01			to. 432-685-433 e Tank Battery						
· · · · · · · · · · · · · · · · · · ·				Min 1 ()					T N				
Surface Ow	ner			Mineral O			·		Lease N	0.			
Unit Letter	Gastion	Tourstin	Denes I	LOCA Feet from the		ON OF RELEASE rth/South Line   Feet from the   East/West Line   County							
Unit Letter	Section	Township	Range	North	South Line	Feet from the	East/	west Line		Coun	ity		
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			Latit	-		Longitud							
		1011		NAT	URE	OF RELI							
Type of Rele Source of Re				<del>.</del>			Release See Beld		Volume S Date and I	ee Below Hour of Dis	coverv	- See Bel	low
						See Below							
Was Immedi	ate Notice (		Yes	No 🗌 Not Re	equired	If YES, To Mike Brate	whom? her w/OCD						
By Whom? I					÷		lour - See Below						
Was a Water	course Read		] Yes 🛛	No		If YES, Vo	lume Impacting t	he Wat	tercourse.				
If a Waterco	urse was Im	pacted, Descr	ribe Fully.*										
		-											
Describe Ca	ise of Probl	em and Reme	dial Action	Taken *									
As detailed in	n Closure R	eport Dated J	une 5, 2009,	, there have beer	n a total	of <u>3</u> spills at	this site as follows	<u>s:</u>	1 400 111	and us -			
produced wa	/08, 400 bb ter from FW	I. produced w VKN (mostly (	ater from water from water from water from water the second second second second second second second second se	ater transfer pun side firewall), so	np failu ome ove	re (contained erspray, recov	inside firewall), re ered 15 bbl. 3 <sup>rd</sup> s	ecovere pill: 1	ed 400 bbl. 2 0/06/08, 450	2 <sup>nd</sup> spill: 7/ bbl water/c	14/08, oil fron	20 bbl. n water ta	ank
overflow, (co	ontained ins	ide firewall),	recovered 44			1 97		1	· · · · · · · · · · · · · · · · · · ·				
		essed and exca											
		and Cleanup			ch and i	mnacted area	s were excavated a	and the	a material ha	uled off			
See attached	report. The	arrected area.	3 were asses.	see by relia rel		impacted area.		and the	inatorial na	uleu oli.			
											· ·		
I hereby cert	ify that the i	information g	iven above i	s true and comp	lete to t	he best of my	knowledge and u	ndersta	and that purs	uant to NM	OCD 1	ules and	
public health	or the envi	ronment. The	e acceptance	of a C-141 repo	ort by th	e NMOCD m	nd perform correc arked as "Final Re	eport"	does not reli	eve the ope	rator o	f liability	,
							on that pose a three the operator of 1						lth
federal, state	, or local la	ws and/or regi	ulations.						_			y other	
	/	7. 1	2	Λ			OIL CON	SERV	VATION	DIVISIO	<u> NC</u>		
Signature: / IM Keld								<i>[</i> .]					
Printed Name: Tim Reed (Agent for COG)						Approved by	Signid Sypervise	Ay./4	Dran	in_			
Title: Senior	Title: Senior Project Manager						Approval Date EP 3 0 2009 Ex			Date: N	4		
E-mail Addr	ess: timothy	.reed@tetrate	ech.com				Approval:	<b>A</b> -		A 44 - 1 - 1			
Date: 6/05/0										Attached	I LI		
Date: 6/05/0 * Attach Add		ets If Necess		hone:(432)682-	+339				1 R	p-186			
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## JUN 17 2009



June 5, 2009

Mr. Mike Bratcher New Mexico Energy, Minerals, & Natural Resources Oil Conservation Division, Environmental Bureau 1301 W. Grand Ave. Artesia, New Mexico 88210

## Re: Assessment and Closure Report – for the COG Operating, LLC, GJ North Central Tank Battery Facility, Located in Unit Letter P, Section 16, Township 17 South, Range 29 East, Eddy County, New Mexico.

Dear Mr. Bratcher:

Tetra Tech (Formerly Highlander Environmental Corp.) was contacted by COG Operating, LLC to investigate a series of spills (3) that occurred at the GJ North Central Tank Battery. The tank battery is located in Unit Letter P, Section 16, Township 17 South, Range 29 East, Eddy County, New Mexico. The site coordinates are N 32.82837°, W 104.07338°. The Site is shown on Figures 1and 2.

## Background

#### Spil<u>l #1</u>

The original spill was discovered on June 16, 2008. According to the C-141 (Initial) included in Appendix A, the spill was caused by a mechanical failure inside the pump motor. Approximately 400 barrels of produced water spilled into the facility berm and 400 barrels were recovered. The spill was fully contained inside the facility berm. The spill location is shown on Figure 3.

#### Spill #2

Remediation of this spill was essentially completed, when a second spill occurred on July 13, 2008. This spill was caused by a micro switch malfunction on a vessel allowing pressure to build in the vessel, which opened the pressure relief valve. Approximately 20 barrels of produced water was released and the liquids were contained within the facility berm. Approximately 15 barrels were recovered with a vacuum truck. Additionally, there was an area of overspray, which measured 80' x 150' (heavier overspray) and 100' x 150' (lighter overspray). The spill location is shown on Figure 4. The C-141 (initial) is included in Appendix A.



#### Spill #3

Remediation of this spill was essentially completed, when a third spill occurred on October 6, 2008. This spill was caused when a water transfer pump broke down. Approximately 450 barrels of oil and produced water was released and the liquids were contained within the facility berm. Approximately 445 barrels were recovered with a vacuum truck. The spill location is shown on Figure 5. The C-141 (Initial and Final) are included in Appendix A. All three of these spills had common overlapping areas of impact.

#### **Groundwater and Regulatory**

A water well located in Section 22, Township 18 South, Range 29 East, was measured using a steel tape to gauge the depth to water. The water well was not in use at the time and the static depth to water was measured at approximately 82.0' below ground surface (bgs).

A risk-based evaluation was performed for the Site in accordance with the 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 on the regional groundwater data, the proposed RRAL for TPH is 1,000 mg/kg.

## **Assessment and Corrective Action**

#### Spill #1

COG supervised the removal of impacted soil from inside the tank battery berm. Approximately 3 to 4 inches of soil was removed from the impacted area. The excavated material was placed on plastic to be hauled to disposal.

On June 17, 2008 Tetra Tech personnel inspected the facility and collected confirmation samples for TPH, BTEX and chloride. A total of seven (7) auger holes were placed in the impacted area. All the 0-1' grab samples analyzed, exhibited concentrations below the RRAL for TPH and BTEX. However chloride concentrations were elevated in the 0-1' surface sample. The concentrations ranged from 22,400 mg/kg to 7,320 mg/kg in auger holes (AH-1 thru AH-7). Auger holes (AH-1, AH- 2, and AH-3) still showed elevated concentrations in the 1'-1.5' interval ranging form 2,650 mg/kg to 555 mg/kg. Auger holes (AH-4 thru AH-7) exhibited concentrations below 250 mg/kg in the 1'-1.5' interval. At the 2'-2.5' interval, only auger hole AH-1 exceeded the 250 mg/kg with a concentration of 545 mg/kg. Due to auger refusal, deeper samples were not obtained. The sample locations and spill area are shown on Figure 3. The sample analyses are summarized in Table 1. Copies of the laboratory reports and chain of custody documents are included in Appendix B. Based on the results, no additional activities were performed at the facility excavation.

## Spill #2

On July 22, 2008, samples were collected from the spill area. A total of thirteen



(13) auger holes were placed in the impacted area. The sample locations are shown on Figure 4. The soil samples were analyzed for TPH (Modified 8015), BTEX (8021 B), and Chloride (SM 4500-Cl B).

Auger holes (AH-1 through AH-7) were placed inside the facility berm. Auger holes (AH-8 through AH-13) were placed in the area affected by the overspray northwest of the facility. Of the thirteen auger holes placed in the affected areas, five auger holes (AH-1, AH-3, AH-5, AH-6, and AH-7) exhibited concentrations that exceeded the RRAL for TPH in the 0-1' interval. The TPH concentrations ranged from to 1,405 mg/kg to 8,806 mg/kg. The deeper samples at 1'-1.5' below ground surface exhibited concentrations below the RRAL for TPH.

The total BTEX levels in auger holes (AH-5 and AH-7) at 0-1.0' exceeded the RRAL level with concentrations of 106.76 mg/kg and 244.2 mg/kg, respectively. The benzene concentrations in auger hole (AH-7) also exceeded the RRAL with 11.3 mg/kg in the 0-1.0' interval. Both auger holes, (AH-5 and AH-7), did not exhibit BTEX concentrations above the RRAL levels in the 1'-1.5' interval.

The chloride concentrations at the site were vertically defined at depths of 1' to 2' below surface. Chloride concentrations ranged from less than 100 mg/kg to 6,710 mg/kg in (AH-7, 1'-1.5'). The chloride concentrations in auger holes (AH-8 through AH-13) were below the reporting limit. The highest chloride impact was encountered in auger holes (AH-5, AH-6 and AH-7). The sample analyses are summarized in Table 2. Copies of the laboratory reports and chain of custody documents are included in appendix B.

On July 22, 2008, when Tetra Tech inspected the site, COG had begun cleanup activities with the removal of the oily pea gravel in and around the production equipment. In addition COG also supervised the removal of impacted soil from inside the tank battery berm. Approximately 1.0' of soil was removed from the impacted area. The excavated material was hauled to CRI (Controlled Recovery Inc.) for disposal. On August 14, 2008 Tetra Tech supervised the brush hogging of the vegetation and the tilling of the soils affected by the overspray.

#### Spill #3

On October 21, 2008 Tetra Tech personnel inspected the facility and collected samples for TPH, BTEX and chloride. A total of twelve (12) auger holes were placed in the impacted area. TPH concentrations exceeded the RRAL to depths ranging from 1.0' to 2.0' in AH-1, AH-10, AH-11 and AH-12, as well as BTEX in AH-1, AH-11 and AH-12. Chloride concentrations were defined in all auger holes to below 250 mg/kg with the exceptions of AH-3, which exhibited a chloride concentration of 512 mg/kg at 2.0' and AH-4 which declined to 348 mg/kg at 5.0'. The impacted soils were excavated to depths ranging from 1.0'-5.0', as shown on Figure 5. The sample analyses are summarized in Table 3. Copies of the laboratory reports and chain of custody documents are included in appendix B.

#### Conclusions

The remedial activities performed at the site, leaves no residual TPH or BTEX concentrations that exceed the RRAL. The minimal chloride residue in the area of auger

3



holes AH-3 and AH-4, were left in-situ. However, based on the depth to groundwater, declining chloride concentrations, and the limited area of impact, the residual chloride concentrations do not appear to be an issue. Based upon the results of the assessment work and remediation performed at this site, COG requests closure of the 3 spills at this site. The C-141 (Final) covering all 3 spills are included in Appendix A. If you have any question or comments concerning the assessment or the activities performed at the Site, please call me at (432) 682-4559.

Respectfully submitted,

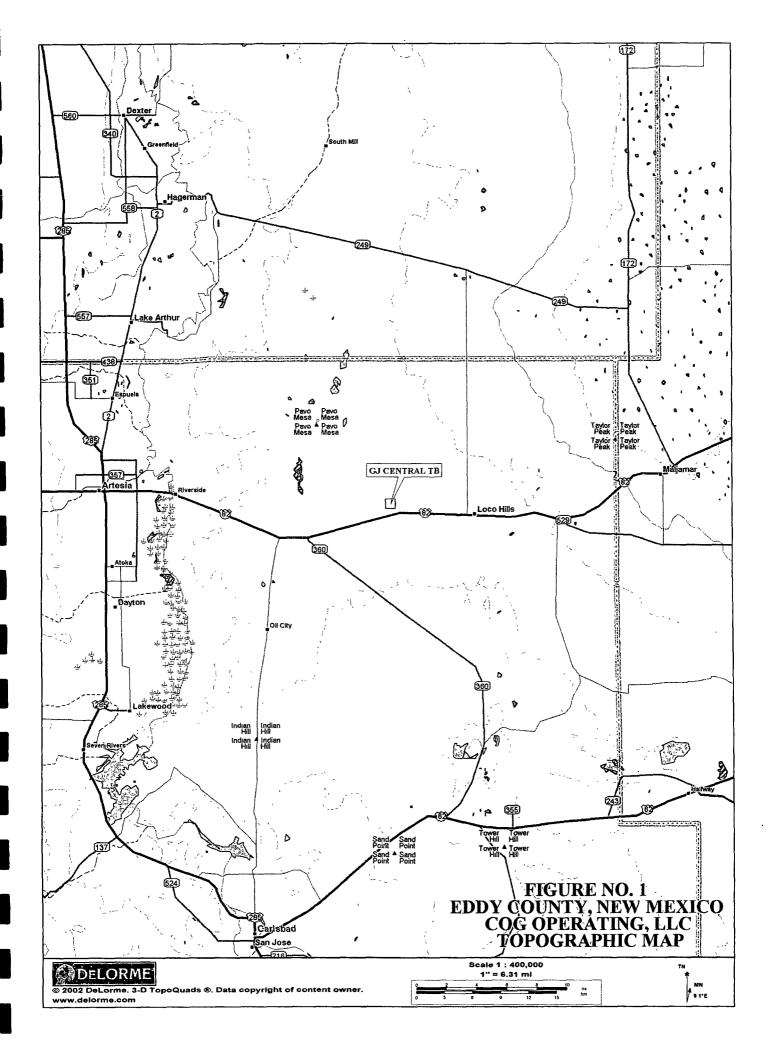
Tetra Tech Inc. M

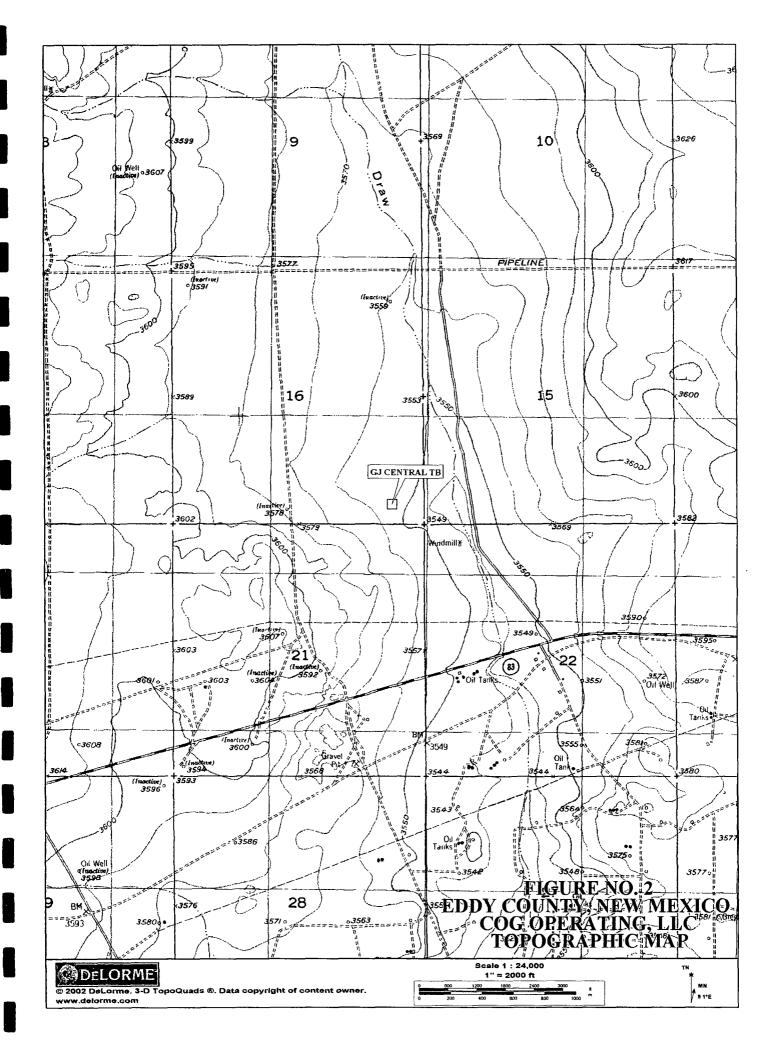
cc: Pat Ellis – COG

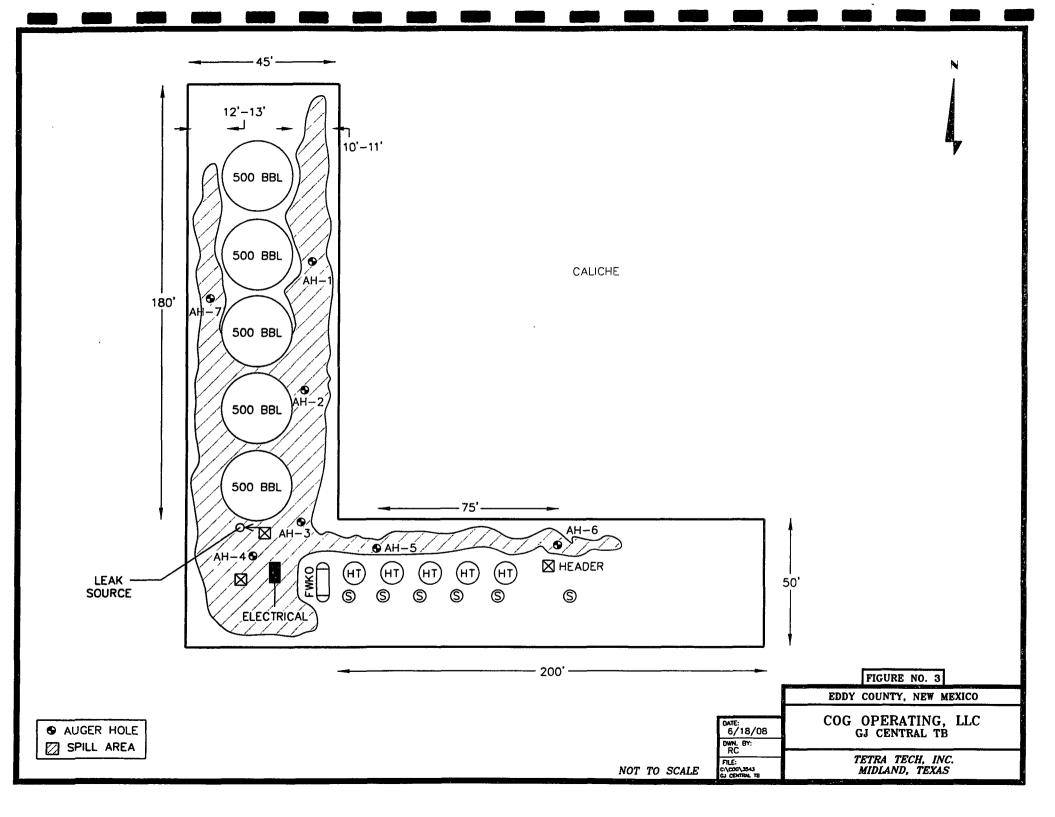
Tim Reed, P.G. Senior Project Manager

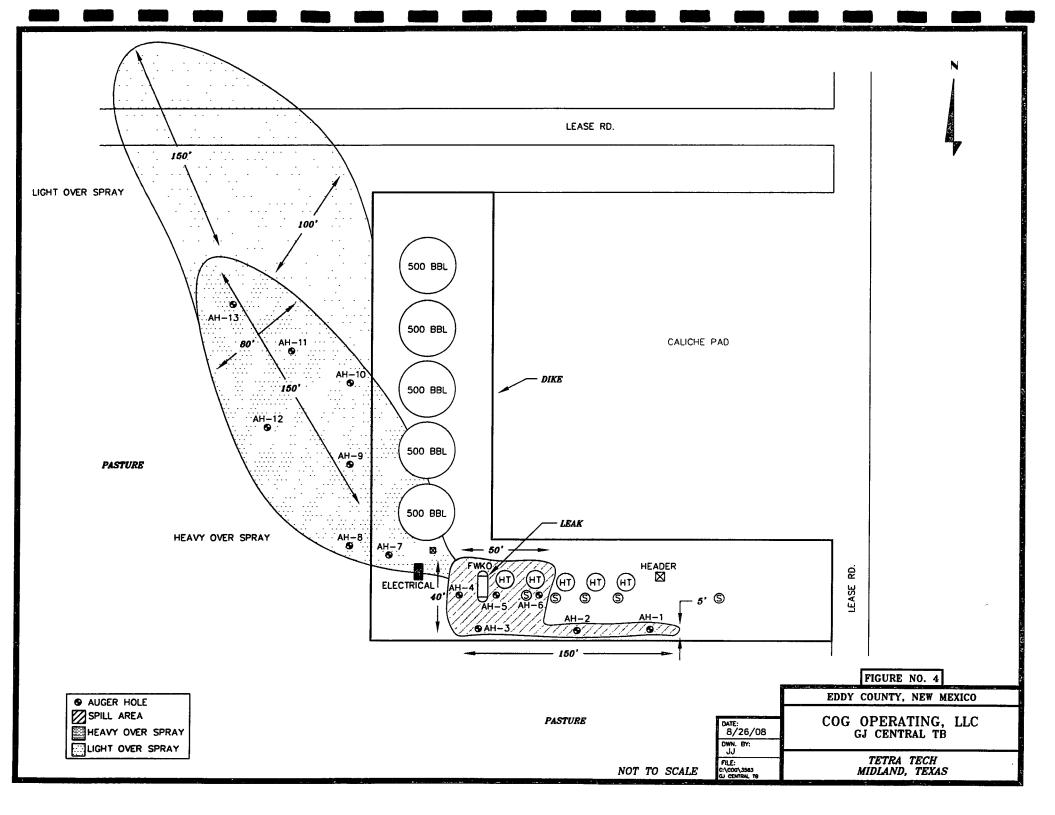
## **FIGURES**

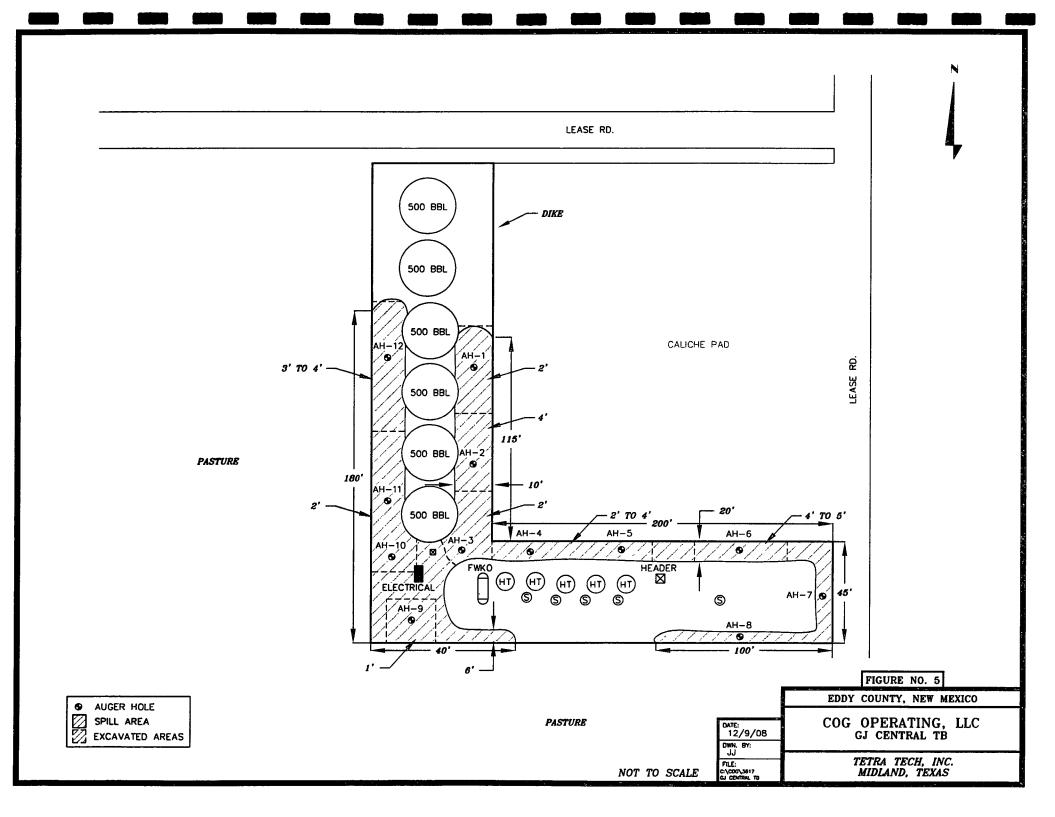
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## TABLES

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# Table 1COG OperatingG.J. Central Tank Battery (Spill #1)Eddy County, New Mexico

Sample	Date	Sample	Soil S	Status		TPH (mg/kg	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	6/17/2008	0-1	Х		<50.0	2.91	2.91	< 0.0100	< 0.0100	< 0.0100	0.0162	22,400
		1-1.5	Х		-	-	-	-	-	-		2,650
		1.5-2.0	X			-	-	-	-		-	545
AH-2	6/17/2008	0-1	X		<50.0	3.99	3.99	< 0.0100	<0.0100	<0.0100	0.0123	20,100
		1-1.5	X		-	-	-	-	_	_		555
		1.5-2.0	X		-	-	-	-	-	-	-	<100
	6/17/2008	0-1	X		<50.0	<1.00	<50.0	< 0.0100	< 0.0100	<0.0100	<0.0100	17,000
		1-1.5	Х		-	-	-	-	-	-		691
		1.5-2.0	X			-	-	-	-	-		132
AH-4	6/17/2008	0-1	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	14,000
		1-1.5	Х		_	_	-	-	-	-	-	<100
		1.5-2.0	Х		_	-	-		-	-	-	127
AH-5	6/17/2008	0-1	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	9,680
		1-1.5	X		-	_	-	-	-	-		<100
		1.5-2.0	X		-	-	-			-		<100
AH-6	6/17/2008	0-1	X		<50.0	<1.00	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	13,500
		1-1.5	X		-	-	-	-	_	-	_	<100
		1.5-2.0	Х		-	-	-	-	-	-	-	<100
AH-7	6/17/2008	0-1	X		105	44.1	149.1	<0.0200	<0.0200	0.0713	0.212	7,320
		1-1.5	Х		-	-	-		-	-	-	225
		1.5-2.0	Х		-	-	-	-	_		-	<100
							<u> </u>		L			

## Table 2COG OperatingG.J. Central Tank Battery (Spill #2)Eddy County, New Mexico

Comula	Date	Samula	Sail	Status		y County, N		Dammana	Toluene	Ethlyhongono	Valore	Chlassida
Sample ID	Sampled	Sample Depth (ft)	In-Situ	Removed	DRO	TPH (mg/kg GRO	<u>J)</u> Total	Benzene	(mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
	Sampled	Depth (It)	In-Situ	Removeu	DKU	GRU	Total	(mg/kg)	(mg/kg)	(Ing/kg)	(mg/kg)	(mg/kg)
AH-1	7/22/2008	0-1		X	3,350	604	3,954	< 0.0500	0.241	3.84	6.83	<100
	1	1-1.5	X		<50.0	14.1	14.1	-	-	-	-	170
					2010							
AH-2	7/22/2008	0-1		X	689	79.2	768.2	< 0.0200	< 0.0200	< 0.0200	0.0388	340
	1	1-1.5	Х	[	-	-	-	-	-	-	-	<100
	1		······································	1								
AH-3	7/22/2008	0-1		X	7,860	946	8,806	< 0.0500	0.738	3.18	4.63	705
	1	1-1.5	X	1	<50.0	37.8	37.8	-	-	-	-	<100
							1					
AH-4	7/22/2008	0-1		X	250	31.6	281.6	-	-	- 1	-	196
		1-1.5	X		-	-	-	-	-	- 1	-	<100
AH-5	7/22/2008	0-1		X	4,240	2,050	6,290	0.366	21.5	27.5	57.4	1,570
	1	1-1.5	X		<50.0	44.3	44.3	< 0.0100	< 0.0100	0.0390	0.0911	1,580
		2-2.5'	X		-	-	-	-	-	-	-	<25.0
AH-6	7/22/2008	0-1		X	1,170	235	1,405	< 0.0100	< 0.0100	0.0424	0.0913	3,120
		1-1.5	X		<50.0	81.7	81.7	-	-	-	-	326
AH-7	7/22/2008	0-1		X	3,400	3,420	6,820	11.3	97.6	67.5	67.8	1,180
		1-1.5		X	<50.0	47.0	47.0	0.0111	0.0362	0.0666	0.0954	6,710
		2-2.5	X		-		-	-		-	-	<100
AH-8	7/22/2008	0-1	X		534	9.04	543.04	-	-	-	-	<100
		1-1.5	Х		-	-		-	-	-		<100
AH-9	7/22/2008	0-1	X		555	6.39	561.39	-	-	-	-	<100
		1-1.5	X		-	-	-	-	-	-	-	<100
					<b>7</b> 0 0							1.0.0
AH-10	7/22/2008	0-1	X		<50.0	3.66	3.66	-	-	-	-	<100
		1-1.5	Х		-	_	-	-	-	-	-	<100
A TT 11	7/22/2008		v		<50.0	2.20	2 20	!		<u> </u>		<100
AH-11	//22/2008	0-1	X X		<50.0	2.39	2.39	-	-	-	_	<100
		1-1.5	^		-	-		-	-	-		<100
AH-12	7/22/2008	0-1	X		<50.0	4.72	4.72			-		<100
AII-12	112212000	1-1.5	<u> </u>			- 4.72	4.72	-	-			<100
			<u></u>		-	_			-	-	-	~100
AH-13	7/22/2008	0-1	X		<50.0	1.99	1.99	-	-	-		<100
· M1-13		1-1.5	<u> </u>			-	1.39	-	-	-	-	<100
	(-) Not Analyzed		**							L		-100

## Table 3 COG GJ Central Tank Battery (Spill #3) Eddy County, NM

Sample	Date	Sample	Soil	Status		TPH (mg/kg	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	10/21/08	0-1		X	9,170	4,170	13,340	44.2	205	83.6	144	3,580
		1-1.5		X	<50.0	46.1	46.1	-	-	-	-	4,550
		2-2.5	X		<50.0	6.01	6.01		-	-	-	<100
AH-2	10/21/08	0-1	<u> </u>	X	<50.0	18.0	18.0	-	 	-		2,430
		1-1.5	<u></u>	X		_	-	_		-	-	782
	+	2-2.5	,	X	-	-	-	-				1,130
·		3-3.5		X		-	_	-	<u></u>	_		5,810
		4-4.5	X		-	-	-		-	-	-	<100
AH-3	10/21/08	0-1		X	<50.0	5.67	5.67	-		-		6,350
		1-1.5		X	-	-	-	-	_	-		1,820
		2-2.5	Х		-	-	-	-	-	-	-	512
 AH-4	10/21/08	0-1		X	143	74.0	217	0.0136	0.250	0.560	1.21	8,850
I		1-1.5	·····	X	-	-		_	-	-	-	8,220
		2-2.5		X	-	-	-	-	-	-	-	1,930
		3-3.5		X	-		-	_	-	-	-	2,320
		4-4.5		X	-	-	-	-	-	-	-	1,460
		5-5.5	<u>X</u>		<u> </u>	-	-		-		-	348 .
AH-5	10/21/08	0-1		X	<50.0	24.6	24.6	-	-	-	-	8,720
		1-1.5		X	-	-	-	-	-	-		5,500
		2-2.5		X	-	_	-	-	-	-	_	1,260
		3-3.5	X		-		-		-	-	-	<100

## Table 3 COG GJ Central Tank Battery (Spill #3) Eddy County, NM

Sample	Date	Sample	Soil	Status		TPH (mg/kg	<u>;)</u>	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-6	10/21/08	0-1		X	<50.0	4.87	4.87	-	-	-	-	2,290
		1-1.5		X	-	-	-	-	-	-	-	3,880
		2-2.5		X	-	-	-	-	-	-	-	5,450
		3-3.5		X	-	-	-	-	-	-	-	5,160
		4-4.5		X	-	-	-	-	-	-	-	938
		4.5-5	Х		-	-	-	-	-		-	104
 AH-7	10/21/08	0-1	X		<50.0	< <u>1.00</u>	<50.0	-	_	_		135
· · · · · · · · · · · · · · · · · · ·		1-1.5	X		-	-	-	_	-	-	-	166
AH-8	10/21/08	0-1	X		<50.0	<1.00	<50.0			-	<u> </u>	203
		1-1.5	X		-	-	-	-	-	-	_	<100
AH-9	10/21/08	0-1		x	<50.0	7.58	7.58	_	-	-	-	1,840
		1-1.5	X		-	-	-	-		-	-	<100
AH-10	10/21/08	0-1		X	3,220	274	3,494	1.50	8.61	0.708	12.7	1,360
		1-1.5		X	<50.0	1.58	1.58	-	-	-	-	4,170
		2-2.5	X			_	-	-		-	_	<100
AH-11	10/21/08	0-1		X	3.850	2,440	6,290	38.3	146	82.3	114	519
		1-1.5		X	711	1,770	2,481	-	-	-	-	1,230
		2-2.5		X	<50.0	19.2	19.2	-	-	-	-	409
		3-3.5	Х		-	-	-	- 、	-	-	-	<100
AH-12	10/21/08	0-1		X	1,980	494	2,474	2.50	25.3	17.4	37.9	2,590
		1-1.5		X	<50.0	6.62	6.62	-	-	-	-	1,810
	1	2-2.5		X	-	-	-	-	-	-	-	3,460
		3-3.5		X	-	-	-	-	-	-	-	1,580
· · · · · · · · · · · · · · · · · · ·		4-4.5	Х		-	-	-	-	-	-	-	176

## APPENDIX A NMOCD FORM C-141

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District 1 1625 N French Dr., Hobbs, NM 88240 District 11	01-	State of New Mexico Minerals and Natural Resources				
<ul> <li>[301 W. Grand Avenue, Artesia, NM 88210</li> <li><u>District III</u></li> <li>[000 Rio Brazos Road, Aztec, NM 87410</li> <li><u>District IV</u></li> <li>[220 S. St. Francis Dr., Santa Fe, NM 87505</li> </ul>	1220	Conservation Division South St. Francis Dr. nta Fe, NM 87505				
Re	lease Notific	ation and Corrective A	ction			
		OPERATOR				
Name of Company COG OPERATING	LLC	Contact Kanicia Carrillo				
Address 550 W. Texas, Suite 1300 Mid	and, TX 79701	Telephone No. 432-685-43	32			
Facility Name GJ North Central Batter	/	Facility Type Oil Well - Ta	ank Battery			
Surface Owner	Mineral O	Iwner	L			
	LOCA	TION OF RELEASE				
Unit Letter Section Township Range		North/South Line Feet from the	East/West			

				100						
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/West	t Line	County
	16	17S	29E	660	Sou	ıth	660	East		Eddy
			La	titude		Longitud	le			
				NAT	TIRE	OF REL				
Type of Rela	ase Produ	iced Water			UILI		Release 400 bb	ls Ve	olume Re	ecovered 400 bbls
Source of Re	elease w	vater transfer	pump			Date and H	Hour of Occurrence Approx 3:00am	e Da	ate and F 5/16/08	lour of Discovery 7:00am
Was Immedi	iate Notice (	Given?		<u></u>		If YES, To			10.00	7.00411
			Yes [	No 🗌 Not R	equired	Left messa	nge w/ Mike Brato	her		
By Whom?						Date and I				
Was a Water	rcourse Read		] Yes 🛛	71 No		IFYES, V	olume Impacting	the Waterco	ourse.	
	<u> </u>				_		······································			
If a Waterco	urse was Im	pacted, Desci	ribe Fully.	•						
Describe Ca	use of Probl	em and Reme	edial Actio	n Taken.*						· · · · · · · · · · · · · · · · · · ·
				We replaced a co	upling in	the pumps n	notor.			
Describe Ar	ea Affected	and Cleanup	Action Ta	ken.*						
All fluid was	s contained	within the fire	ewall at the	e battery. We are		removing a	ll fluid from the g	round and v	will exca	vate and remove contaminated
soil. Highla	nder Enviro	nmental will s	send repor	t and soil samples	i.					
11	·		•	· · · · · · · · · · · · · · · · · · ·	1.4.4.4	- 1				
										ant to NMOCD rules and ases which may endanger
public health	1 or the envi	ronment. The	e acceptan	ce of a C-141 rep	ort by the	NMOCD m	arked as "Final R	eport" does	not relie	eve the operator of liability
should their	operations h	ave failed to	adequately	y investigate and a	remediate	contaminati	ion that pose a thr	eat to groun	nd water,	surface water, human health mpliance with any other
		ws and/or reg		platice of a C-141	report ut	Jes not renew	e une operator or	responsioni	ity for co	inpliance with any other
							OIL CON	SERVAT	TION	DIVISION
Signature:	K· ·	$\sim$		•						
						Approved by	District Supervis	or-		
Printed Nam	e: Kanicia	Carrillo								
Title: Regul	atory Analy	rst				Approval Da	te:	Exn	viration E	Date:
							·····	P		
E-mail Addr	ess: kcarril	lo@conchore	sources.co	m	<u> </u>	Conditions o	f Approval:			Attached 🔲
Date: 06	/16/08		Рһопе: 4	432-685-4332						

\* Attach Additional Sheets If Necessary

Release #1

Form C-141 Revised October 10, 2003

Final Report

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

Initial Report

Lease No.

								42 5 H
<u>District I</u> 1625 N. French Dr., Hobb	s, NM 88240		Sta Energy Min		New Mexi			Form C-14
District II 1301 W. Grand Avenue, A	Artesia, NM 8821	0						Revised October 10, 200
<u>District III</u> 1000 Rio Brazos Road, A					onservation Division South St. Francis Dr.			Submit 2 Copies to appropriat District Office in accordance
District IV 1220 S. St. Francis Dr., S		5			St. Franci NM 875		with Rule 116 on bac side of for	
	· · ·	······					-4.	
		Kele	ease Notific	ation	operat			ial Report 🔲 Final Rep
Name of Company					Contact Ka	anicia Carrillo	······	
Address 550 W. To			nd, TX 79701			lo. 432-685-43	32 th Central Batter	
Facility NameGJ					гастиу тур			
Surface Owner-Stat	e		Mineral O				Lease	No. API# 30-015-02996
Unit Letter Section	1 Township	Range	LOCA Feet from the		N OF REI	Feet from the	East/West Line	County
	170	200	(())	<b>C</b>		(())	E t	
P 16	175	<b>29</b> E	660	50	uth	660	East	Eddy
		La	titude		Longitud	e		
			NAT	URE	OF RELI			
Type of Release P Source of Release	oduced Water Free Water K	nock-out				Release 20bbls		Recovered 15bbls Hour of Discovery
					7/13/08	Unknown	7/13/08	
Was Immediate Notic		Yes [	] No 🔲 Not Re	quired	If YES, To V/M Mike			
By Whom? Kanicia	Carrillo			-	Date and H	our 7/14/08 3:	30pm	
Was a Watercourse R	eached?	] Yes 🗵	7		If YES, Vo	lume Impacting	the Watercourse.	
		ribe Fully.	• •					
	oblem and Rem	edial Actio	n Taken.*	to maxii	mum level an	d opened pressur	e relief valve. Th	e liquid on the surface was picke
	oblem and Rem tion on vessel,	edial Actio pressure or	n Taken.* vessel increased t	o maxii	mum level an	d opened pressur	e relief valve. Th	liquid on the surface was picke
Micro switch malfun up. Describe Area Affect	oblem and Rem ction on vessel, ed and Cleanup ned inside the fi	edial Actio pressure or Action Tal rewall. A 1	n Taken.* vessel increased t ken.* 00'x100' sq ft area	a was sp	prayed in the a			e liquid on the surface was picke d soil and gravel will be dug up
Micro switch malfun- up. Describe Area Affect All liquid was contai and removed. Highla I hereby certify that t regulations all operat public health or the e should their operation or the environment.	bblem and Rem stion on vessel, ed and Cleanup ned inside the finder Environment ors are required nvironment. Th as have failed to n addition, NM	edial Actio pressure or Action Tal rewall. A 1 ental will su given above to report a be acceptan o adequately (OCD accep	n Taken.* n vessel increased t ken.* 00'x100' sq ft area ubmit chlorides an e is true and compl nd/or file certain ra ce of a C-141 repo y investigate and ra	a was sp d final 1 lete to tl elease n rt by the	prayed in the a report. he best of my otifications an e NMOCD m e contaminati	adjoining pasture knowledge and und perform corre arked as "Final F on that pose a the	. All contaminate understand that pu ctive actions for r Report" does not r reat to ground wa	
Micro switch malfun- up. Describe Area Affect All liquid was contai and removed. Highla I hereby certify that t regulations all operat public health or the e should their operation	bblem and Rem stion on vessel, ed and Cleanup ned inside the finder Environment ors are required nvironment. Th as have failed to n addition, NM	edial Actio pressure or Action Tal rewall. A 1 ental will su given above to report a be acceptan o adequately (OCD accep	n Taken.* n vessel increased t ken.* 00'x100' sq ft area ubmit chlorides an e is true and compl nd/or file certain ra ce of a C-141 repo y investigate and ra	a was sp d final 1 lete to tl elease n rt by the	prayed in the a report. he best of my otifications an e NMOCD m e contaminati	adjoining pasture knowledge and the nd perform correction arked as "Final F on that pose a the e the operator of	. All contaminate understand that pu ctive actions for r Report" does not r reat to ground wa	rsuant to NMOCD rules and eleases which may endanger elieve the operator of liability er, surface water, human health compliance with any other
Micro switch malfun- up. Describe Area Affect All liquid was contai and removed. Highla I hereby certify that t regulations all operat public health or the e should their operation or the environment. federal, state, or loca	bblem and Rem tion on vessel, ed and Cleanup ned inside the finder Environment inder Environment. The shave failed to n addition, NM laws and/or reg	edial Actio pressure or Action Tal rewall. A 1 ental will su given above to report a be acceptan o adequately (OCD accep	n Taken.* n vessel increased t ken.* 00'x100' sq ft area ubmit chlorides an e is true and compl nd/or file certain ra ce of a C-141 repo y investigate and ra	a was sp d final 1 lete to the lease n rt by the mediat report d	brayed in the a report. he best of my otifications and e NMOCD m e contaminations of the second oes not reliev	adjoining pasture knowledge and the nd perform correction arked as "Final F on that pose a the e the operator of	All contaminate understand that pu- ctive actions for r teport" does not r reat to ground wa responsibility for SERVATIO	d soil and gravel will be dug up rsuant to NMOCD rules and eleases which may endanger elieve the operator of liability er, surface water, human health compliance with any other
Micro switch malfun- up. Describe Area Affect All liquid was contai and removed. Highla I hereby certify that t regulations all operat public health or the e should their operation or the environment. federal, state, or loca	bblem and Remettion on vessel, ed and Cleanup ned inside the finder Environment inder Environment. The is have failed to in addition, NM laws and/or reguined is Carrillo	edial Actio pressure or Action Tal rewall. A 1 ental will su given above to report a be acceptan o adequately (OCD accep	n Taken.* n vessel increased t ken.* 00'x100' sq ft area ubmit chlorides an e is true and compl nd/or file certain ra ce of a C-141 repo y investigate and ra	a was sp d final t elete to th elease n rt by the emediat report d	brayed in the a report. he best of my otifications and e NMOCD m e contaminations of the second oes not reliev	adjoining pasture knowledge and u nd perform corre arked as "Final F on that pose a thi e the operator of <u>OIL CON</u> District Supervis	All contaminate understand that pu- ctive actions for r teport" does not r reat to ground wa responsibility for SERVATIO	d soil and gravel will be dug up rsuant to NMOCD rules and eleases which may endanger elieve the operator of liability er, surface water, human health compliance with any other <u>N DIVISION</u>
Micro switch malfun- up. Describe Area Affect All liquid was contain and removed. Highla I hereby certify that the regulations all operation public health or the e should their operation or the environment. federal, state, or loca Signature:	bblem and Remetion on vessel, ed and Cleanup ned inside the finder Environment. The information goes are required notronment. The is have failed to n addition, NM laws and/or reguined the Carrillo	edial Actio pressure or Action Tal rewall. A 1 ental will si given above to report a to report a to acceptan adequately OCD accep gulations.	n Taken.* n vessel increased to ken.* 00'x100' sq ft area ubmit chlorides an e is true and compl nd/or file certain re ce of a C-141 repo y investigate and re ptance of a C-141 re	a was sp d final t lete to the elease n rt by the emediate report d	brayed in the a report. he best of my otifications an e NMOCD m e contaminati oes not reliev Approved by	adjoining pasture knowledge and u nd perform corre arked as "Final F on that pose a the on that pose a the e the operator of <u>OIL CON</u> District Supervis	All contaminate understand that purctive actions for r teport" does not r reat to ground wa responsibility for SERVATION	d soil and gravel will be dug up rsuant to NMOCD rules and eleases which may endanger elieve the operator of liability er, surface water, human health compliance with any other <u>N DIVISION</u>

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<u>District I</u> 1625 N. French I	Dr., Hobbs, N	NM 88240				f New Mex						n C-141
<u>District II</u> 1301 W. Grand /	Avenue, Arte	sia, NM 88210		Energy Mi	nerals	s and Natura	Resources		Revised October 10, 2003			•
<u>District III</u> 000 Rio Brazos	Road, Aztec	., NM 87410				ervation Div				District	Copies to app Office in acc	cordance
<u>District IV</u> 220 S. St. Franc	is Dr., Santa	a Fe, NM 87505				th St. Franc Fe, NM 875				W	ith Rule 116 side	on back of form
30-010	5-029	96	Rel	ease Notific				ction				<u> </u>
MLB 0927	2 -5 - 2 2 70	3				OPERA		_	🛛 Initia	l Report	Fina	al Repor
Name of Co	mpany C	COG OPERA			37	Contact K	anicia Carrillo					
		is, Suite 130 EST COOP		nd, TX 79701		Telephone 1 Facility Typ	No. 432-685-43	32				
Surface Ow				Mineral (	Jwner				Lease N	o. API# 3	0-015-0299	<del></del>
Su acc own						DN OF RE	FASE	<u> </u>		<u></u>		
Unit Letter	Section	Township	Range	Feet from the		h/South Line	Feet from the	East/We	est Line	County		
P	16	175	29E	660	Sout	th	660	East		Eddy		
				titude		Longitud	L		K			
						E OF REL						
Type of Relea						Volume of	Release- 450bbl			ecovered-		
Source of Rel	lease- wate	<del>a</del> tank				Date and I 10/6/08- 9	Hour of Occurrenc :00am		Date and 1 10/6/08-2	Hour of Dig :00 pm	scovery	
Was Immedia	ate Notice (		Vec	] No 🗌 Not R	omire	If YES, To	Whom?			•		
By Whom?	Kanicia Ca					red Mike Bratcher Date and Hour 10/06/08 5:10 pm						
Was a Water		ched?	Yes D				olume Impacting t		course.			
ICo Watersou	urce wee Im	pacted, Descr										
II A WARLOW	113C W23 110	pacieu, Desei	100 I Uli <u>y</u> .									
			·. :									
Describe Cau	sc of Probl	em and Reme	dial Actio	on Taken.*		····					<u></u> .	<u> </u>
				ump was repa	aired.	-						
		and Cleanup /			l svot	or 11/00 mm	aved from in	aida tha		11 Tatra	Tech wil	
		inal report.		y firewall. Al	li wai	ici was iem		side ine	: Illewa	II. ICUA	Teen wit	i sena
<b>I</b> -		1										
hereby certi	fy that the	information gi	ven abov	e is true and comp	plete to	the best of my	knowledge and u	Inderstand	d that purs	uant to NM	10CD rules	and
public health	or the envi	ronment. The	acceptan	nd/or file certain ince of a C-141 rep	ort by 1	the NMOCD n	narked as "Final R	cport" do	es not reli	ieve the ope	erator of liab	olity
				y investigate and i ptance of a C-141								
		ws and/or regu				1						
1	/ ~.	<u> </u>					OIL CON	SERV/	ATION	DIVISI	<u>UN</u>	
Signature:	<u>k</u>				· <b>.</b>	Annanadha	District Comments	~~				
Printed Name	: Kanicia	Carrillo				Approved by	District Supervis	ы. Т			- <u>up</u>	
litte: Regula	tory Analy	st				Approval Da	lc:	E	xpiration	Date:		
E-mail Addre	ss: kcarrill	lo@conchores	ources.co	m		Conditions o	f Approval:			Atrad	4 [7]	
Date: 10/07/			: 432-68				f Approval: pted for reco NMOCD ne o E eloso	ord			' Ll	
		ets If Necess					NMOCD	/ <u></u> (	CED 3	0 2000		- <u></u>
$\mathcal{D}_{1}$		# ~ ~	2			@ Tin	ne of closu	ure '		Math		
rele	CHSC 1	#3.F.	5					Ã	RD	- 2(/)	2	
AMIR	Conz	rul I							/ \ /	JY	5	

FINCA 09273 54661

APPENDIX B SUMMARY REPORT June 24, 2008

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## Summary Report

Ike Tavarez Highlander Environmental Services 1910 N. Big Spring Street Midland, TX, 79705

Report Date: June 24, 2008

## Work Order: 8061825

Project Location:Eddy County, NMProject Name:COG/G.J. Central TBProject Number:3543

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
163875	SB-1 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163876	SB-1 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163877	SB-1 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163878	SB-2 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163879	SB-2 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163880	SB-2 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163881	SB-3 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163882	SB-3 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163883	SB-3 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163884	SB-4 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163885	SB-4 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163886	SB-4 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163887	SB-5 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163888	SB-5 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163889	SB-5 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163890	SB-6 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163891	SB-6 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163892	SB-6 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18
163893	SB-7 0-1.0'	soil	2008-06-17	00:00	2008-06-18
163894	SB-7 1.0-1.5'	soil	2008-06-17	00:00	2008-06-18
163895	SB-7 1.5-2.0'	soil	2008-06-17	00:00	2008-06-18

		]	BTEX		TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
163875 - SB-1 0-1.0'	< 0.0100	< 0.0100	< 0.0100	0.0162	<50.0	2.91
163878 - SB-2 0-1.0'	< 0.0100	< 0.0100	< 0.0100	0.0123	<50.0	3.99
163881 - SB-3 0-1.0'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	<50.0	<1.00
163884 - SB-4 0-1.0'	< 0.0100	< 0.0100	< 0.0100	<0.0100	<50.0	< 1.00 .

 $continued \ldots$ 

Report Date: June 24, 2008	Work Order: 8061825	Page Number: 2 of 4
3543	COG/G.J. Central TB	Eddy County, NM

 $\dots$  continued

enzene       Toluene $mg/Kg$ ) $(mg/Kg)$ $(0.0100 < 0.0100)$ $(0.0100)$ $(0.0200) < 0.0200$ $(0.0200)$ .0'       Flag         -1.5'       Flag	Ethylbenzene (mg/Kg) <0.0100 <0.0100 0.0713 Result 22400		DRO (mg/Kg) <50.0 <50.0 105 Units ng/Kg	GRO (mg/Kg) <1.00 <1.00 44.1 RI 2.00
0.0100       <0.0100         0.0100       <0.0100         0.0200       <0.0200         0'          flag          1.5'	<0.0100 <0.0100 0.0713 Result 22400	<0.0100 <0.0100 0.212	<50.0 <50.0 105 Units	<1.00 <1.00 44.1
(0.0100       <0.0100	<0.0100 0.0713 Result 22400	<0.0100 0.212	<50.0 105 Units	<1.00 44.1 RI
0' -1.5'	0.0713 Result 22400	0.212	105 Units	44.1 RI
0' Flag 1.5'	Result 22400	<u></u> I.,	Units	RI
Flag	22400			
.1.5'	22400			
			<u> </u>	<u></u>
	$\mathbf{Result}$		Units	R
	2650		ng/Kg	2.0
	545	m	ng/Kg	2.0
0,1				
<b>0</b> '			<b>T</b> T 1.	
<b>0'</b> Flag	Result 20100		Units	
	Result 20100		Units ng/Kg	R. 2.0
Flag		m		
	<b>2.0'</b> Flag	Flag Result	Flag Result	Flag Result Units

Sample: 163881 - SB-3 0-1.0'

Report Date: June 24, 2008 3543		Work Order: 8061825 COG/G.J. Central TB		Number: 3 of 4 dy County, NM
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		17000	mg/Kg	2.00
Sample: 163882 - SB-3 1	.0-1.5'			
Param	Flag	$\operatorname{Result}$	Units	$\mathbf{RL}$
Chloride		691	mg/Kg	2.00
Sample: 163883 - SB-3 1	.5-2.0'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride	· · · · · · · · · · · · · · · · · · ·	132	mg/Kg	2.00
Sample: 163884 - SB-4 0	-1.0'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride		14000	mg/Kg	2.00
Sample: 163885 - SB-4 1	.0-1.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 163886 - SB-4 1	.5-2.0'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		127	mg/Kg	2.00
Sample: 163887 - SB-5 0	-1.0'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		9680	mg/Kg	2.00
Sample: 163888 - SB-5 1	.0-1.5'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00

Report Date: June 2 3543	4, 2008	Work Order: 8061825 COG/G.J. Central TB		Number: 4 of 4 dy County, NM
Sample: 163889 -	SB-5 1.5-2.0'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 163890 -	SB-6 0-1.0'			
Param	$\operatorname{Flag}$	Result	Units	$\mathbf{RL}$
Chloride		13500	mg/Kg	2.00
Sample: 163891 -	SB-6 1.0-1.5'			
Param	Flag	$\operatorname{Result}$	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 163892 -				
<b>Sample: 163892 -</b> Param	SB-6 1.5-2.0' Flag	$\operatorname{Result}$	Units	RL
-		Result <100	Units mg/Kg	RL 2.00
Param	Flag			
Param Chloride Sample: 163893 - Param	Flag	<100 Result	mg/Kg Units	2.00 RL
Param Chloride	Flag SB-7 0-1.0'	<100	mg/Kg	2.00
Param Chloride Sample: 163893 - Param	Flag SB-7 0-1.0' Flag	<100 Result	mg/Kg Units	2.00 RL
Param Chloride Sample: 163893 - Param Chloride	Flag SB-7 0-1.0' Flag	<100 Result	mg/Kg Units	2.00 RL
Param Chloride Sample: 163893 - Param Chloride Sample: 163894 -	Flag SB-7 0-1.0' Flag SB-7 1.0-1.5'	<100 Result 7320	mg/Kg Units mg/Kg	2.00 RL 2.00
Param Chloride Sample: 163893 - Param Chloride Sample: 163894 - Param	Flag SB-7 0-1.0' Flag SB-7 1.0-1.5' Flag	<100 Result 7320 Result	mg/Kg Units mg/Kg Units	2.00 RL 2.00 RL
Param Chloride Sample: 163893 - Param Chloride Sample: 163894 - Param Chloride	Flag SB-7 0-1.0' Flag SB-7 1.0-1.5' Flag	<100 Result 7320 Result	mg/Kg Units mg/Kg Units	2.00 RL 2.00 RL

## SUMMARY REPORT November 4, 2008

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## **Summary Report**

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

Report Date: November 4, 2008

## Work Order: 8102420

.

Project Location:	Eddy Co., NM
Project Name:	COG/GS West Co-op Unit 52 CTB
Project Number:	115-6403617

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
177271	AH-1 0-1'	soil	2008-10-21	00:00	2008-10-24
177272	AH-1 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177273	AH-1 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177274	AH-2 0-1'	soil	2008-10-21	00:00	2008-10-24
177275	AH-2 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177276	AH-2 2'-2.5'	$\mathbf{soil}$	2008-10-21	00:00	2008-10-24
177277	AH-2 3'-3.5'	soil	2008-10-21	00:00	2008-10-24
177278	AH-2 4'-4.5'	soil	2008-10-21	00:00	2008-10-24
177279	AH-3 0-1'	soil	2008-10-21	00:00	2008-10-24
177280	AH-3 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177281	AH-3 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177282	AH-4 0-1'	soil	2008-10-21	00:00	2008-10-24
177283	AH-4 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177284	AH-4 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177285	AH-4 3'-3.5'	soil	2008-10-21	00:00	2008-10-24
177286	AH-4 4'-4.5'	soil	2008-10-21	00:00	2008-10-24
177287	AH-4 5'-5.5'	soil	2008-10-21	00:00	2008-10-24
177288	AH-5 0-1'	soil	2008-10-21	00:00	2008-10-24
177289	AH-5 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177290	AH-5 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177291	AH-5 3'-3.5'	soil	2008-10-21	00:00	2008-10-24
177292	AH-6 0-1'	soil	2008-10-21	00:00	2008-10-24
177293	AH-6 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177294	AH-6 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177295	AH-6 3'-3.5'	soil	2008-10-21	00:00	2008-10-24
177296	AH-6 4'-4.5'	soil	2008-10-21	00:00	2008-10-24
177297	AH-6 4.5'-5'	soil	2008-10-21	00:00	2008-10-24
177298	AH-7 0-1'	soil	2008-10-21	00:00	2008-10-24
177299	AH-7 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177300	AH-8 0-1'	soil	2008-10-21	00:00	2008-10-24

Report Date: 115-6403617	November 4, 2008		order: 8102420 est Co-op Unit 52 CTB	Pag	e Number: 2 of 8 Eddy Co., NM
0. 1.	Description	<u>Ман-1</u>	Date	Time	Date
Sample ·	Description	Matrix	Taken	Taken	Received
177301	AH-8 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177302	AH-9 0-1'	soil	2008-10-21	00:00	2008-10-24
177303	AH-9 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177304	AH-10 0-1'	soil	2008-10-21	00:00	2008-10-24
177305	AH-10 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177306	AH-10 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177307	AH-11 0-1'	soil	2008-10-21	00:00	2008-10-24
177308	AH-11 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177309	AH-11 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177310	AH-11 3'-3.5'	soil	2008-10-21	00:00	2008-10-24
177311	AH-12 0-1'	soil	2008-10-21	00:00	2008-10-24
177312	AH-12 1'-1.5'	soil	2008-10-21	00:00	2008-10-24
177313	AH-12 2'-2.5'	soil	2008-10-21	00:00	2008-10-24
177314	AH-12 3'-3.5'	soil	2008-10-21	. 00:00	2008-10-24
177315	AH-12 4'-4.5'	soil	2008-10-21	00:00	2008-10-24

		]	BTEX	**	TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
177271 - AH-1 0-1'	44.2	205	83.6	144	9170	4170
177272 - AH-1 1'-1.5'					<50.0	46.1
177273 - AH-1 2'-2.5'			-		<50.0	6.01
177274 - AH-2 0-1'					<50.0	18.0
177279 - AH-3 0-1'					<50.0	5.67
177282 - AH-4 0-1'	0.0136	0.250	0.560	1.21	143	74.0
177288 - AH-5 0-1'				1	<50.0	24.6
177292 - AH-6 0-1'					<50.0	4.87
177298 - AH-7 0-1'					<50.0	<1.00
177300 - AH-8 0-1'					<50.0	<1.00
177302 - AH-9 0-1'					<50.0	7.58
177304 - AH-10 0-1'	1.50	8.61	0.708	12.7	3220	274
177305 - AH-10 1'-1.5'					<50.0	1.58
177307 - AH-11 0-1'	38.3	146	82.3	114	3850	2440
177308 - AH-11 1'-1.5'					711	1770
177309 - AH-11 2'-2.5'					<50.0	19.2
177311 - AH-12 0-1'	2.50	25.3	17.4	37.9	1980	494
177312 - AH-12 1'-1.5'					<50.0	6.62

Sample: 177271 - AH-1 0-1'

Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		3580	mg/Kg	2.00

#### Sample: 177272 - AH-1 1'-1.5'

Param	Flag	$\mathbf{Result}$	Units	$\mathbf{RL}$
Chloride		4550	mg/Kg	2.00

Report Date: November 4, 2008 115-6403617		Work Order: 8102420 COG/GS West Co-op Unit 52 CT	Work Order: 8102420 COG/GS West Co-op Unit 52 CTB	
Sample: 177273 - A	H-1 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 177274 - A	H-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		2430	mg/Kg	2.00
Sample: 177275 - A	H-2 1'-1.5'			
Param	Flag	Result	Units	RL
Chloride		782	mg/Kg	2.00
Sample: 177276 - A	H-2 2'-2.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		1130	mg/Kg	2.00
Sample: 177277 - A	H-2 3'-3.5'			
Param	Flag	$\mathbf{Result}$	Units	RL
Chloride		5810	mg/Kg	2.00
Sample: 177278 - A	H-2 4'-4.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 177279 - A	H-3 0-1'			
Param	Flag	Result	Units	RL
Chloride	0	6350	mg/Kg	2.00
	U 9 1) 1 E)			
Sample: 177280 - A	H-9 1 -1.9			
Sample: 177280 - A Param	Flag	Result	Units	RL

Report Date: Novembe 115-6403617	r 4, 2008	Work Order: 8102420 COG/GS West Co-op Unit 52	2 CTB	Page Number: 4 of 8 Eddy Co., NM
Sample: 177281 - A	H-3 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		512	mg/Kg	2.00
Sample: 177282 - Al	H-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		8850	mg/Kg	2.00
Sample: 177283 - A	H-4 1'-1.5'			
Param	Flag	Result	Units	RL
Chloride		8220	mg/Kg	2.00
Param Chloride Sample: 177285 - A	Flag H-4 3'-3.5'	Result 1930	Units mg/Kg	RL 2.00
Param	Flag	Result	Units	RI
Chloride	F lag	2320	mg/Kg	2.00
Sample: 177286 - A				
Param Chloride	Flag	Result	Units	
		1400	mg/Kg	2.00
Sample: 177287 - A				
Param Chloride	Flag	Result 348	Units	RI
		J40	mg/Kg	2.00
Sample: 177288 - A	H-5 0-1'			
Param Chloride	Flag	Result 8720	Units mg/Kg	RI 2.0

Report Date: November 4, 2008 115-6403617		Work Order: 8102420 COG/GS West Co-op Unit 52 CTB		Page Number: 5 of 8 Eddy Co., NM	
Sample: 177289 - AH-	5 1'-1.5'				
Param	Flag	Result	Units	$\operatorname{RL}$	
Chloride		5500	mg/Kg	2.00	
3					
Sample: 177290 - AH-	5 2'-2.5'				
Param	Flag	Result	Units	RL	
Chloride		1260	mg/Kg	2.00	
Sample: 177291 - AH-	5 3'-3.5'				
Param	Flag	Result	Units	RL	
Chloride		<100	mg/Kg	2.00	
-		Recult	Unite	PT	
Sample: 177293 - AH- Param Chloride	6 1'-1.5' Flag	Result 3880	Units mg/Kg		
Param Chloride Sample: 177294 - AH-	Flag 6 2'-2.5'	3880	mg/Kg	2.00	
Param Chloride Sample: 177294 - AH- Param	Flag	3880 Result	mg/Kg Units	2.00	
Param Chloride Sample: 177294 - AH-	Flag 6 2'-2.5'	3880	mg/Kg	2.00	
Param Chloride Sample: 177294 - AH- Param Chloride	Flag 6 2'-2.5' Flag	3880 Result	mg/Kg Units	2.00	
Param Chloride Sample: 177294 - AH- Param Chloride Sample: 177295 - AH- Param	Flag 6 2'-2.5' Flag	3880 Result 5450 Result	mg/Kg Units mg/Kg Units	2.00 RI 2.00	
Param Chloride Sample: 177294 - AH- Param Chloride Sample: 177295 - AH-	Flag 6 2'-2.5' Flag 6 3'-3.5'	3880 Result 5450	mg/Kg Units mg/Kg	2.00 	
Param Chloride Sample: 177294 - AH- Param Chloride Sample: 177295 - AH- Param	Flag 6 2'-2.5' Flag 6 3'-3.5' Flag	3880 Result 5450 Result	mg/Kg Units mg/Kg Units	2.00 RI 2.00	
Param Chloride Sample: 177294 - AH- Param Chloride Sample: 177295 - AH- Param Chloride	Flag 6 2'-2.5' Flag 6 3'-3.5' Flag	3880 Result 5450 Result	mg/Kg Units mg/Kg Units	2.00 	

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Report Date: November 4, 2008 115-6403617		Work Order: 8102420 COG/GS West Co-op Unit 52 CTB		Page Number: 6 of 8 Eddy Co., NM
Sample: 177297 ·	- AH-6 4.5'-5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		104	mg/Kg	2.00
Sample: 177298	- AH-7 0-1'			
Param	Flag	Result	Units	RL
Chloride		135	mg/Kg	2.00
Sample: 177299	- AH-7 1'-1.5'			
Param	$\mathbf{Flag}$	Result	Units	RL
Chloride		166	mg/Kg	2.00
Sample: 177300 Param Chloride	- AH-8 0-1' Flag	Result 203	Units mg/Kg	RL 2.00
Sample: 177301		<b>D</b>		
Param Chloride	Flag	Result	Units	
		<100	mg/Kg	2.00
Sample: 177302	- AH-9 0-1'			
Param	Flag	Result	Units	RL
Chloride		1840	mg/Kg	2.00
Sample: 177303	- AH-9 1'-1.5'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 177304	- AH-10 0-1'			
Param	Flag	Result	Units	RL
Chloride	0	1360	mg/Kg	2.00

Report Date: Novem 115-6403617	ber 4, 2008	Work Order: 8102420 COG/GS West Co-op Unit 8		Page Number: 7 of 8 Eddy Co., NM
Sample: 177305 -	AH-10 1'-1.5'			
Param	Flag	Result	Units	RL
Chloride		4170	mg/Kg	2.00
Sample: 177306 -	AH-10 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 177307 -	AH-11 0-1'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		519	mg/Kg	2.00
Param Chloride Sample: 177309 -	Flag	Result	Units mg/Kg	RL 2.00
Param	Flag	Result	Units	RL
Chloride	1 14g	409	mg/Kg	2.00
Sample: 177310 -	AH-11 3'-3.5'			
Param	Flag	Result	Units	RI
Chloride		<100	mg/Kg	2.00
Sample: 177311 -	AH-12 0-1'			
Param	Flag	Result	Units	RI
Chloride		2590	mg/Kg	2.00
Sample: 177312 -	AH-12 1'-1.5'			
			TT •/	DI
Param	Flag	$\mathbf{Result}$	Units	RI

Report Date: November 4, 2008 115-6403617		Work Order: 8102420 COG/GS West Co-op Unit 52 CTB		Page Number: 8 of 8 Eddy Co., NM			
Sample: 177313 - AH-12 2'-2.5'							
Param	Flag	Result	Units	RL			
Chloride		3460	mg/Kg	2.00			
Sample: 177314 Param		Result	Units	RL			
Chloride	Flag	1580	mg/Kg	2.00			
Sample: 177315	- AH-12 4'-4.5'						
Param	Flag	Result	Units	RL			
Chloride		176	mg/Kg	2.00			

SUMMARY REPORT November 19, 2008

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## Summary Report

Ray Taylor Tetra Tech 1910 N. Big Spring Street Midland, TX 79705

Report Date: November 19, 2008

Work Order: 8072330

Project Location:Eddy Co, NMProject Name:COG/G.J. Central TB (Spill #2)Project Number:3563

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
168019	AH-1 (0-1')	soil	2008-07-22	00:00	2008-07-23
168020	AH-1 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168021	AH-2 0-1'	soil	2008-07-22	00:00	2008-07-23
168022	AH-2 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168023	AH-3 0-1'	soil	2008-07-22	00:00	2008-07-23
168024	AH-3 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168026	AH-4 0-1'	soil	2008-07-22	00:00	2008-07-23
168027	AH-4 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168028	AH-5 0-1'	soil	2008-07-22	00:00	2008-07-23
168029	AH-5 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168030	AH-5 2-2.5'	soil	2008-07-22	00:00	2008-07-23
168031	AH-6 0-1'	soil	2008-07-22	00:00	2008-07-23
168032	AH-6 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168033	AH-7 0-1'	soil	2008-07-22	00:00	2008-07-23
168034	AH-7 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168035	AH-7 2-2.5'	soil	2008-07-22	00:00	2008-07-23
168036	AH-8 0-1'	soil	2008-07-22	00:00	2008-07-23
168037	AH-8 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168038	AH-9 0-1'	soil	2008-07-22	00:00	2008-07-23
168039	AH-9 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168040	AH-10 0-1'	soil	2008-07-22	00:00	2008-07-23
168041	AH-10 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168042	AH-11 0-1'	soil	2008-07-22	00:00	2008-07-23
168043	AH-11 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168044	AH-12 0-1'	soil	2008-07-22	00:00	2008-07-23
168045	AH-12 1-1.5'	soil	2008-07-22	00:00	2008-07-23
168046	AH-13 0-1'	soil	2008-07-22	00:00	2008-07-23
168047	AH-13 1-1.5'	soil	2008-07-22	00:00	2008-07-23

		I	BTEX		TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
168019 - AH-1 (0-1		0.241	3.84	6.83	3350	604
168020 - AH-1 1-1.	5'				<50.0	14.1
168021 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	0.0388	689	79.2
168023 - AH-3 0-1'	< 0.0500	0.738	3.18	4.63	7860	946
168024 - AH-3 1-1.	5'				<50.0	37.8
168026 - AH-4 0-1'					250	31.6
168028 - AH-5 0-1'		21.5	27.5	57.4	4240	2050
168029 - AH-5 1-1.		< 0.0100	0.0390	0.0911	<50.0	44.3
168031 - AH-6 0-1'		< 0.0100	0.0424	0.0913	1170	235
168032 - AH-6 1-1.					<50.0	81.7
168033 - AH-7 0-1'		97.6	67.5	67.8	3400	3420
168034 - AH-7 1-1.		0.0362	0.0666	0.0954	<50.0	47.0
168036 - AH-8 0-1'					534	9.04
168038 - AH-9 0-1'					555	6.39
168040 - AH-10 0-1				[	<50.0	3.66
168042 - AH-11 0-1					<50.0	2.39
						4.72
168044 - AH-12 0-1					<50.0	
168046 - AH-13 0-1 Sample: 168019 - Param	1'		Result		<50.0 Units	1.99 R
168046 - AH-13 0-1 Sample: 168019 - Param	1' AH-1 (0-1')		Result <100		<50.0	1.99 R
168046 - AH-13 0-1 Sample: 168019 - Param Chloride Sample: 168020 -	AH-1 (0-1') Flag AH-1 1-1.5'		<100	m	<50.0 Units g/Kg	1.99 R 2.0
168046 - AH-13 0-1 Sample: 168019 - Param Chloride Sample: 168020 - Param	1' AH-1 (0-1') Flag		<100 Result	m,	<50.0 Units g/Kg Units	1.99 R 2.0
168046 - AH-13 0-1 Sample: 168019 - Param Chloride Sample: 168020 - Param	AH-1 (0-1') Flag AH-1 1-1.5'		<100	m,	<50.0 Units g/Kg	1.99 R 2.0
168046 - AH-13 0-1         Sample: 168019 -         Param         Chloride         Sample: 168020 -         Param         Chloride         Sample: 168021 -	AH-1 (0-1') Flag AH-1 1-1.5' Flag AH-2 0-1'		<100 Result	m	<50.0 Units g/Kg Units g/Kg	1.99 R 2.0 R 2.0
168046 - AH-13 0-1         Sample: 168019 -         Param         Chloride         Sample: 168020 -         Param         Chloride         Sample: 168021 -         Param	AH-1 (0-1') Flag AH-1 1-1.5' Flag		<100 Result	m	<50.0 Units g/Kg Units g/Kg Units	1.99 R 2.0 R
	AH-1 (0-1') Flag AH-1 1-1.5' Flag AH-2 0-1'		<100 Result 170	m	<50.0 Units g/Kg Units g/Kg	1.99 R 2.0 R
168046 - AH-13 0-1         Sample: 168019 -         Param         Chloride         Sample: 168020 -         Param         Chloride         Sample: 168021 -         Param         Chloride	AH-1 (0-1') Flag AH-1 1-1.5' Flag AH-2 0-1' Flag		<100 Result 170 Result	m	<50.0 Units g/Kg Units g/Kg Units	1.99 R 2.0 R 2.0
168046 - AH-13 0-1         Sample: 168019 -         Param         Chloride         Sample: 168020 -         Param         Chloride         Sample: 168021 -         Param         Chloride         Sample: 168021 -         Param         Chloride         Sample: 168021 -         Param         Chloride	AH-1 (0-1') Flag AH-1 1-1.5' Flag AH-2 0-1' Flag AH-2 1-1.5'		<100 Result 170 Result 340	m	<50.0 Units g/Kg Units g/Kg Units g/Kg	1.99 R 2.0 R 2.0
168046 - AH-13 0-1         Sample: 168019 -         Param         Chloride         Sample: 168020 -         Param         Chloride         Sample: 168021 -         Param	AH-1 (0-1') Flag AH-1 1-1.5' Flag AH-2 0-1' Flag		<100 Result 170 Result	m	<50.0 Units g/Kg Units g/Kg Units	

Work Order: 8072330

Page Number: 2 of 5

Report Date: November 19, 2008

Report Date: Nove 3563	ember 19, 2008	Work Order: 80723 COG/G.J. Central TB (S		Page Number: 3 of 5 Eddy Co, NM
Param	Flag	Result	Units	RL
Chloride		705	mg/Kg	2.00
Sample: 168024	- AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride	<u> </u>	<100	mg/Kg	2.00
Sample: 168026	- AH-4 0-1'			
Param	Flag	$\operatorname{Result}$	Units	RL
Chloride		196	mg/Kg	2.00
Sample: 168027	- AH-4 1-1.5'			
Param	Flag	$\mathbf{Result}$	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168028	- AH-5 0-1'			
Param	Flag	$\operatorname{Result}$	Units	$\mathbf{RL}$
Chloride		1570	mg/Kg	2.00
Sample: 168029	- AH-5 1-1.5'			
Param	$\operatorname{Flag}$	$\mathbf{Result}$	Units	RL
Chloride		1580	mg/Kg	2.00
Sample: 168030	- AH-5 2-2.5'			
Param	Flag	$\operatorname{Result}$	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168031	- AH-6 0-1'			
Param	Flag	$\mathbf{Result}$	Units	RL
Chloride		3120	mg/Kg	2.00

Report Date: Novem 3563	ber 19, 2008	Work Order: 807233 COG/G.J. Central TB (S		Page Number: 4 of 5 Eddy Co, NM
Sample: 168032 -	AH-6 1-1.5'			
Param	$\operatorname{Flag}$	Result	Units	$\mathbf{RL}$
Chloride		326	mg/Kg	2.00
		· ·		
Sample: 168033 -	AH-7 0-1'			
Param	$\mathbf{Flag}$	Result	Units	$\operatorname{RL}$
Chloride		1180	mg/Kg	2.00
Sample: 168034 -	AH-7 1-1.5'			
Param	$\mathbf{Flag}$	Result	Units	$\operatorname{RL}$
Chloride		6710	mg/Kg	2.00
Sample: 168035 -	AH-7 2-2.5'			
Param	$\mathbf{Flag}$	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 168036 -	AH-8 0-1'			
Param	$\operatorname{Flag}$	Result	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168037 -	AH-8 1-1.5'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168038 -	AH-9 0-1'			
Param	Flag	$\mathbf{Result}$	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 168039 -	AH-9 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00

Report Date: November 19, 2008 3563		Work Order: 8072330 COG/G.J. Central TB (Spill #2)	)	Page Number: 5 of 5 Eddy Co, NM
Sample: 168040 - AH-1	0 0-1'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 168041 - AH-1	0 1-1.5'			
Param	Flag	Result	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168042 - AH-1	1 0-1'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 168043 - AH-1	1 1-1.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168044 - AH-1	2 0-1'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168045 - AH-1	2 1-1.5'			
Param	Flag	$\operatorname{Result}$	Units	$\operatorname{RL}$
Chloride		<100	mg/Kg	2.00
Sample: 168046 - AH-1	3 0-1'			
Param	Flag	Result	Units	RL
Chloride		<100	mg/Kg	2.00
Sample: 168047 - AH-1	3 1-1.5'			
Param	Flag	$\operatorname{Result}$	Units	RL
Chloride		<100	mg/Kg	2.00

## APPENDIX C GROUNDWATER DATA

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#### Water Well Data Average Depth to Groundwater (ft) COG - GJ Tank Battery, Eddy County, New Mexico

	16 \$	South	2	28 East			16 \$	South	2	9 Eas	t		16 \$	South	3	0 East	
;	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
	- 8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
0	29	<b>61</b> 28	27	26	25	<b>110</b> 30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
	17 \$	 South	2	28 East		L	 17 :	South	2	9 Eas		L	17 :	 South	 3	B0 East	<u> </u>
3	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
,	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
8	17	16	15	14	13	18	17	16 SITE	15	14	13	18	17	16	15	14	13
9	20	21	22 79	23	24	19	20	21	22 8 82	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34 53	35	36	31	32	33	34	35	36	31	32	33	34	35	36
	18 \$	South		28 East		Lonna	18	South	2	9 Eas	it	L	18	South		30 East	
3	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2	1
7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
19	20	21 225	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
30	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36

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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 Static Level - Water well measure by Tetra Tech (6/17/08)



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### National Water Information System: Web Interface

**USGS Water Resources** 

News: Recent changes

#### Data Category: Ground Water

Geographic Area: New Mexico

GO

# **Ground-water levels for New Mexico**

#### Search Results -- 1 sites found

Search Criteria

site\_no list = • 324855104093101

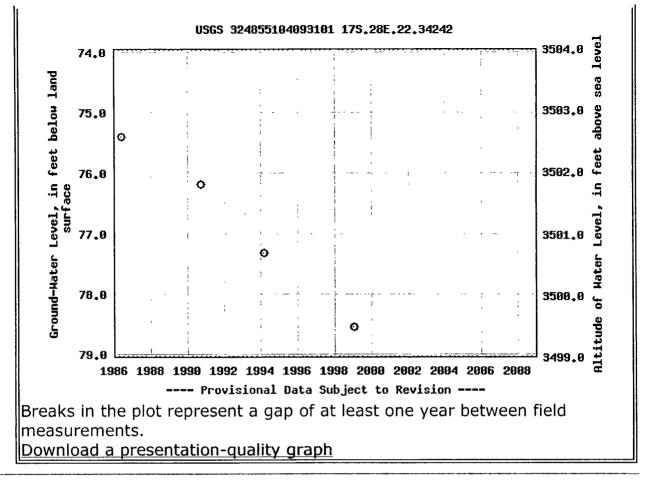
Minimum number of levels = 1

Save file of selected sites to local disk for future upload

## USGS 324855104093101 17S.28E.22.34242

Available data for this site Ground-water: Field measurements

Eddy County, New Mexico Hydrologic Unit Code 13060011 Latitude 32°48'55", Longitude 104°09'31" NAD27	Output formats
Land-surface elevation 3,578 feet above sea level NGVD29 The depth of the well is 95.00 feet below land surface. This well is completed in the ALLUVIUM,BOLSON DEPOSITS AND OTHER SURFACE DEPOSITS (110AVMB) local aquifer.	Table of data Tab-separated data Graph of data Reselect period



#### Questions about sites/data? Feedback on this web site

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U.S. Department of the Interior | U.S. Geological Survey Title: Ground water for New Mexico: Water Levels URL: http://waterdata.usgs.gov/nm/nwis/gwlevels?



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GROUND	
WATER	

EDDY COUNTY

	WAT	TER LEVEL				
LOCATION NUMBER	BELOW LAND SURFACE (feet)	DATE OF MEASUREMENT	YIELD (g.p.m.)	METHOD OF LIFT	USE OF WATER	REMARKS
17.28.2.240	27.6	Dec. 1, 1948	3	W	S	Depth to water measured while pump- ing.
14.220	80		61	W	S & D	Driller: Cy Hinshaw. See analysis, Table 3.
19.200	224.3	Dec. 2, 1948	1.2	W	\$	Depth to water measured while pump- ing.
22.230	45.5	Dec. 1, 1948		N	Ν	Abandoned stock well.
17.29.22.110	79.7	Nov. 29, 1948	3 E.	W	N S	Depth to water measured while pump- ing.
29.400	210	Dec. 3, 1948	1.1	W	S	do.
17.31.34.000	271+	Dec. 6, 1948	3.5	W	S	do. See analysis, Table 3.
18.21.13.310	505 <sup>'</sup>	_	10 R.	W	S & D	Formerly C.C.C. well. Cased to 30 ft.
27.440	530	_		W	S	Cased to 120 ft.
32.430	800 (?)	-	12 R.	W	<b>S &amp; D</b>	Lowered cylinder 5 ft. in 1948 because water level declined. Cased to 380 ft.
18.23.6.140	<b>44</b> 0	Jan. 12, 1950	_	W	S & D	
18.25.23.111	117.8	<b>Jan. 1950</b>		W	S	

See explanation at beginning of table. 1 Measured Dec. 3, 1948.

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TABLE 1. RECORDS	OF	WELLS 1	IN	EDDY	COUNTY,	NEW	MEXICO.	(Continued)
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	OWNER	DATE	TOPOGRAPHIC	ALTITUDE ABOVE SEA	DEPTH OF	DIAMETER	PRINCIPAL WATE	R-BEARING BED
LOCATION NUMBER	OR NAME	COM- PLETED	SITUATION	LEVEL (feet)	WELL (feet)	OF WELL (inches)	CHARACTER OF MATERIAL	GEOLOGIC UNIT
17.28.2.240	Hal Bogle		Flat between mesas		-	6 (?)	Redbeds (?)	Dockum (?)
14.220	do.		Rolling	~-		7	do.	do.
19.200	do.	-	do.	~		8	Redbeds, gypsum (?)	Chalk Bluff or Rustler
22.230	-	-	Flat between mesas		-	6	Redbeds (?)	Rustler or Dockum (?)
17.29.22.110	<u> </u>	·	Bear Grass draw	3,550	-	6	do.	Dockum (?)
29.400	Bishop (?)	-	Flat	-		7	do.	do.
17.31.34.000	<u> </u>		Rolling 、		_	6 (?)	Redbeds	Dockum
18.21.13.310	Andy Teel <sup>9</sup>	1915		4,100	520	8	Limestone	San Andres
27.440	do.	1947	Broad valley	4,200	667	10	do.	do.
32.430	George Teel	1946	Rolling	4,300	815	6	do.	do.
18.23.6.140	Couhape Bros.	1941	S. of Rio Penasco	4,060	500	10	do.	do.
18.25.23.111	G. M. Phelps		Blackdom Terrace	-	-	-	Alluvium (?)	Quaternary (?)

See explanation at beginning of table.

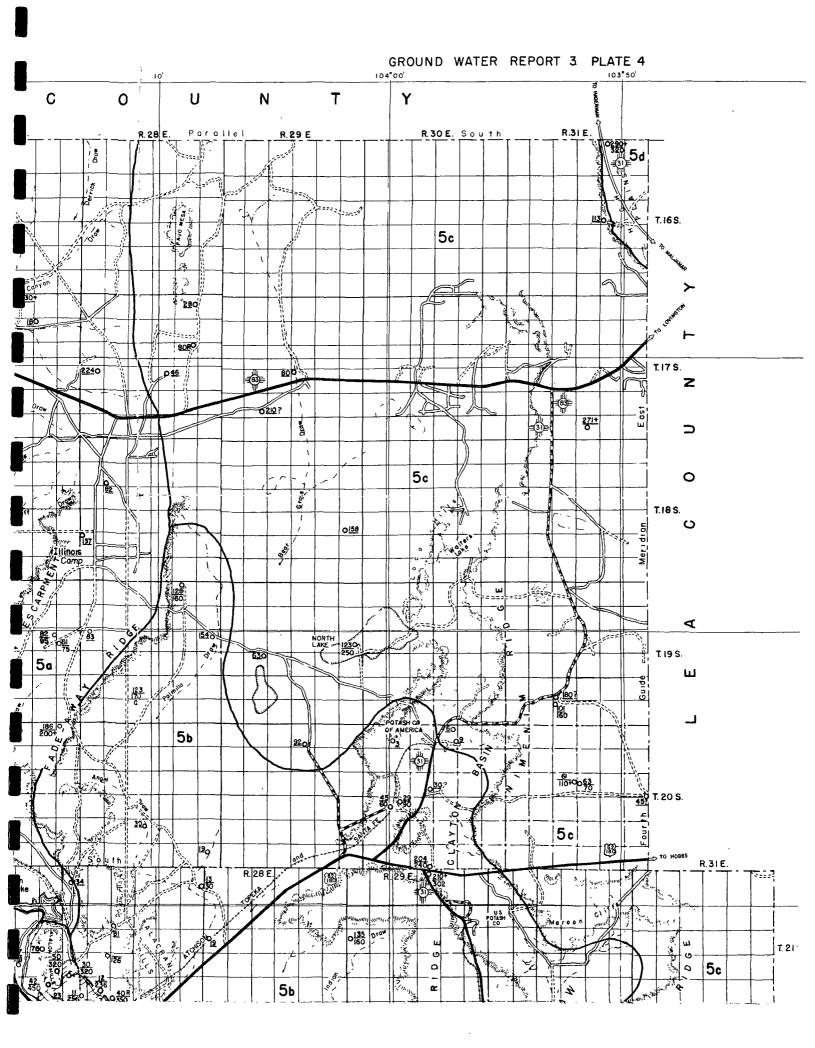
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NEW MEXICO BUREAU OF MINES & MINERAL RESOURCES

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JUN-16-08 05:03PM FROM-CONCHO	+4326854399	T-257	P 02/02 F-230
Minifier 1 1625 N French Dr., Hobbs, NM 88240	State of New Mexico		Form C-
130 W Grand Avenue, Artesia, NM 88210	ergy Minerals and Natural Resources		Revised October 10, 2
District II) 1009 Rio Brazos Roud, Aztec, NM 87410	Oil Conservation Division		Submit 2 Copies to appropriate District Office in accordate
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505	1220 South St. Francis Dr. Santa Fe, NM 87505		with Rule 116 on t side of f
iseBos19251557 Release N	Notification and Corrective Ac	tion	
nseb0819251395	OPERATOR	_	tial Report 🔲 Final R
Name of Company COG OPERATING LLC 2			
Address 550 W. Texas, Suite 1300 Midland, TX 7 Facility Name GJ North Central Battery			
	Facility Type Oil Well - Tan	k Battery	· · · · · · · · · · · · · · · · · · ·
	lineral Owner	Lease	No.
	LOCATION OF RELEASE		
Unit Letter Section Township Range Feet fro	om the North/South Line Feet from the I	East/West Line	County
16 17S 29E 660	South 660	East	Eddy
Latitude	Longitude		
	NATURE OF RELEASE		
Type of Release Produced Water	Volume of Rolease 400 bbls	Volume	Recovered 400 bbls
Source of Release water transfer pump	Date and Hour of Occurrence 06/16/08 Approx 3:00am		Hour of Discovery
Was Immediate Notice Given?	If YES, To Whom?	00/10/02	3 7:00am
	] Not Required Left message w/ Mike Bratcher	г	
By Whom? Kanicia Carrillo Was a Watercourse Reached?	Date and Hour 06/16/08 3:	00pm	
Yes X No	If YES. Volume Impacting the	Watercourse.	
	PILL # 033 COPY FR		
Describe Cause of Problem and Remedial Action Taken.*			•
Describe Cause of Problem and Remedial Action Taken.* Mechanical failure of the water transfer pump. We replac		0141 \\-2	• • • • • • • • • • • • • • • • • • •
Mechanical failure of the water transfer pump. We replac			
Mechanical failure of the water transfer pump. We replac Describe Area Affected and Cleanup Action Taken.*	ed a coupling in the pumps motor.	di ini <u></u>	• • • • • • • • • • • • • • • • • • •
Mechanical failure of the water transfer pump. We replac	bed a coupling in the pumps motor. We are currently removing all fluid from the grou	di ini <u></u>	• • • • • • • • • • • • • • • • • • •
Mechanical failure of the water transfer pump. We replace Describe Area Affected and Cleanup Action Taken.* All fluid was contained within the firewall at the battery.	bed a coupling in the pumps motor. We are currently removing all fluid from the grou	di ini <u></u>	• • • • • • • • • • • • • • • • • • •
Mechanical failure of the water transfer pump. We replace Describe Area Affected and Cleanup Action Taken.* All fluid was contained within the firewall at the battery. soil. Highlander Environmental will send report and soil s	We are currently removing all fluid from the grous samples.	and and will ex-	Cavale and remove contaminat
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Mechanical failure of the water transfer pump. We replace Describe Area Affected and Cleanup Action Taken.* All fluid was contained within the firewall at the battery. soil. Highlander Environmental will send report and soil s I hereby certify that the information given above is true and regulations all operators are required to report and/or file of public health or the environment. The acceptance of a C-1 should their operations have failed to adequately investigat or the environment. In addition, NMOCD acceptance of a federal, state. or local laws and/or regulations. Signature: Printed Name: Kanicia Carrillo Tirle: Regulatory Analyst E-mail Address: kcarrillo@conchoresources.com Date: 06/16/08 Phone: 432-685-43	Deed a coupling in the pumps motor.         We are currently removing all fluid from the grous samples.         Ind complete to the best of my knowledge and under certain release notifications and perform corrective 141 report by the NMOCD marked as "Final Reporte and remediate contamination that pose a threat a C-141 report does not relieve the operator of rest in a C-141 report does not relieve the operator of rest in COIL CONSE         Approved by District Supervisor:         Approved by District Supervisor:         Approved by District Supervisor:         Approval Date: 7-10-DS         Conditions of Approval:         Within 30 days, on or before         a remediation work plan based on delincation finalized and submitted for approval to the I summarizing all actions taken and/or to be to environmental damage         The plan must include general site charactering	and and will exe erstand that pure o actions for re ort" does not re to ground wate ponsibility for of <u>RVATION</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u> <u>SB</u> <u>Expiration</u>	Cavate and remove contaminat Suant to NMOCD rules and leases which may endanger lieve the operator of liability r, surface water, human health compliance with any other DIVISION Remediation Actions to be completed Final C-141 submitted with confirma analyses/documentation on or before Expiration Date. Date: 9-12-08 Attached 2.RP-186 Notify OCD 48 hours prior to obtaining samples where analy
Mechanical failure of the water transfer pump. We replace Describe Area Affected and Cleanup Action Taken.* All fluid was contained within the firewall at the battery. soil. Highlander Environmental will send report and soil s I hereby certify that the information given above is true and regulations all operators are required to report and/or file of public health or the environment. The acceptance of a C-1 should their operations have failed to adequately investigat or the environment. In addition, NMOCD acceptance of a federal, state. or local laws and/or regulations. Signature: Printed Name: Kanicia Carrillo Tirle: Regulatory Analyst E-mail Address: kcarrillo@conchoresources.com Date: 06/16/08 Phone: 432-685-43	Deed a coupling in the pumps motor.         We are currently removing all fluid from the group samples.         Ind complete to the best of my knowledge and under certain release notifications and perform corrective 141 report by the NMOCD marked as "Final Report te and remediate contamination that pose a threat a C-141 report does not relieve the operator of response to a C-141 report does not relieve the operator of response to the perform corrective te at C-141 report does not relieve the operator of response to the perform correct of the performance of the performan	erstand that pure e actions for re ort" does not re to ground wate ponsibility for of <b>RVATION</b> <b>Cum by</b> <b>SB</b> Expiration Stould be Division aken to mitigate stics, site ranking ediation methods, X, Chlorides or an	Cavate and remove contaminat Suant to NMOCD rules and leases which may endanger lieve the operator of liability or, surface water, human health compliance with any other DIVISION Remediation Actions to be completed Final C-141 submitted with confirma analyses/documentation on or before Expiration Date. Date: 9-12-08 Attached 2-RP-1866 Notify OCD 48 hours prior to obtaining samples where analy are to be presented to OCD
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JUL-15-	-08 03:02	PM FROM-C	ONCHO			_	+4326854399	T-324	P	02/02 F-425
1625 N French District If	Dr., Hobbs,	NM 88240				New Mex	100 11 Resources			Form C-141
1301 W. Grand District III	Avenue, Art	csia, NM 88210	)						-	Revised October 10, 2003
1000 Rio Braze	os Road, Azte	x, NM 87410				vation Di			5	ubmit 2 Copies to appropriate District Office in accordance
District IV 1220 S. St. Fra	ncis Dr., Sant	a Fe, NM 8750	5			n St. France, NM 875				with Rule 116 on back side of form
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L'SEBOR			****		vanut					
Name of C	ompany (	t (J) COG OPERA	TINGL	LC 22913	2	OPERA'	anicia Carrillo	🛛 Init		Report 🗌 Final Repor
Address 5	SO W. Toxi	as, Suite 130	0 Midla	nd, TX 79701		Telephone I	No. 432-685-43			
Facility Na	meGJ W	est Coop Un	it #52 3	0-015-02	996	Facility Typ	w - Oil/GJ Nort	h Central Batter	у	
Surface Ow	mer-State			Mineral (	Owner	_		Lease	No.	API# 30-015-02996
				LOC	ATIO	N OF RE	LEASE			
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/West Line	C	ounty
P	16	17 <b>S</b>	29E	660	So	uth	660	East		n ala.
L				1					1	Eddy
			La	titude						
				NAT	TURE	OF REL				
Type of Rele Source of Re		uced Water Free Water Kr	nock-out				Release 20bbls			overed 15bbls in of Discovery
				, 		7/13/08	Unknown	7/13/08		9:00am MST
Was Immedi	ate Notice C		Yes 🗌	No 🗌 Not R	equired	If YES, To V/M Mike				
By Whom?						Date and H	our 7/14/08 3:3	Opm		
Was a Water	course Reac		Yes 🛛			IFYES, Vo	lume Impacting th	e Watercourse.		
16 . 17/02000						[				
IT & WEIERCOL	irse was tinj	pacted, Descri		1#20	23	COP	Y FROM V	VELL FILE	, F	
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				01.1						
Describe Cau	se of Proble	m and Remed	hal Action	Taken.*						
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up.										
Doscribe Area	A Preted a	nd Cleanup A	ction Tak	en 4						
		•							_	
All Iquid was and removed.	i contained i Highlande	inside the fire r Environmen	wall. A 10 (al will su	0'x100' sq ft are bmit chlorides an	a was spr d final re	wyed in the a sport,	djoining pasture.	All contaminated	soi) :	and gravel will be dug up
I hereby certif	y that the ir	formation giv	en above	is true and compl	lete to the	= best of my l	mowledge and un	derstand that purs	นสกา	to NMOCD rules and
regulations all	operators a	re required to	report an	d/or file certain re	elease not	tifications an	d perform correct	ve actions for rela	8969	s which may endanger the operator of liability
should their of	perations ha	ive failed to a	loquately	investigate and re	emediate	contaminatio	n that pose a thre	it to ground water	, sur	face water, human health
or the environ foderal, state,	ment. In ad or local law	Idition, NMO s and/or regul	CD accept ations.	ance of a C-141	roport do	es not relieve	the operator of re	sponsibility for co	omp)	liance with any other
				· · · · · · · · ·			OIL CONS	ERVATION	DΓ	VISION
Signature:	<u> </u>	زے ا	~	,						
N-i	. Kanisia (	a milla			A	pproved by I	District Superviso	Trank.	. (	7_
Printed Name	Annela C					· · · · · · · · · · · · · · · · · · ·		Gum bi	1-	0
Title: Regula	ory Analysi				A	pproval Date	7-16-09	Expiration I	Daie	:
E-mail Addres	s: kcarrillo	@conchoreso	urces.con	1	c	onditions of	Approval:			uached D
Date: 7	/15/08		Pho	ne: 432-685-433	2	, SEE	ATTACHED		<b>^</b>	2RP-199
Attach Addit		s If Nocessa			<b>-</b>		ULATIONS		<u></u>	
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New Mexico Energy, Minerals and Natural Resources Department

Bill Richardson Governor

Joanna Prukop Cabinet Secretary Reese Fullerton Deputy Cabinet Secretary

CERTIFIED MAIL—Return Receipt Requested 7007 2680 0001 6451 2681

July 16, 2008

COG Operating LLC ATTN: Kanicia Carrillo 550 W Texas, suite 1300 Midland, TX 79701 Mark Fesmire Division Director Oil Conservation Division



# COPY FROM WELL FILE

RE: GJ West COOP Unit 052 30-015-02996 P-16-17S-29E Eddy County, New Mexico

Dear Operator:

This office is in receipt of your C-141 on the produced water release, at this facility.

NMOCD Rule 19.15.3.116 states in part "...The responsible person must complete **division approved corrective** action for releases which endanger public health or the environment. Releases will be addressed in accordance with a <u>remediation plan</u> submitted to and approved by the division or with an abatement plan submitted in accordance with Section 19 of 19.15.1 NMAC."

Information and tools for proper corrective action may be found in the Environmental Handbook on our web site at the following link:

http://www.emnrd.state.nm.us/ocd/documents/7C\_spill1.pdf

The following actions are required to be addressed in the remediation plan:

- Determine the horizontal and vertical delineation of the spill by sampling.
- Prepare a sketch of the site indicating where and at what depths the samples were taken.
- Submit laboratory results of sampling as well as the proposed remediation with the plan.

Remediation requirements may be subject to other federal, state and local laws or regulations.

Within 30 days, **on or before August 19, 2008**, completion of a remediation work plan should be finalized and submitted to the Division, summarizing all actions taken or to be taken to mitigate environmental damage related to the leak, spill or release, for approval.

Please be advised that NMOCD acceptance and/or approval of documents or work plans 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 and/or approval of documents or work plans do not relieve the operator of responsibility for compliance with any other federal, state, local laws and/or regulations.

If I may be of further assistance with this matter or should you have any questions, please feel free to contact me.

Sincerely,

Sherry Bonham NMOCD District II, Artesia (505) 748-1283 ext 109 E-mail: <u>sherry.bonham@state.nm.us</u>

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<u>District 1</u> 1625 N. French Dr., Hobbs, NM 88240	State of New Mexico				Form C-141		
<u>District II</u> 301 W. Grand Avenue, Artesia, NM 88210	Energy Minerals and Natural Resources				Revised October 10, 2003		
District III 000 Rio Brazos Road, Aztec, NM 87410	Oil Conservation Division				Submit 2 Copies to appropriate District Office in accordance		
District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505	1220 South St. Francis Dr.				with Rule 116 on back side of form		
	Santa Fe, NM 87505						
30-015-02996 Re	lease Notification	on and C	orrective A	ction			
MLB 0927353379		OPERA			Initial Report	Final Repo	
Name of Company COG OPERATING Address 550 W. Texas, Suite 1300 Midl			Anicia Carrillo No. 432-685-43	37			
Facility Name - GJ WEST COOP Unit 52		Facility Ty		52			
Surface Owner		Lease No. API# 30-015-02996					
	Mineral Owner						
Unit Letter Section Township Range		ON OF RE	Feet from the	East/West L	ine County		
P 16 17S 29E	660 Sou	th	660	East	Eddy		
L	atitude	Longitu	de				
	NATUR	E OF REL	EASE				
Type of Release- Water/oil			f Release- 450bbl		me Recovered- 44		
Source of Release- water tank			:00am	Date and Hour of Discovery 10/6/08-2:00 pm			
Was Immediate Notice Given?			If YES, To Whom? Mike Bratcher				
By Whom? Kanicia Carrillo			Date and Hour 10/06/08 5:10 pm				
Was a Watercourse Reached?			If YES, Volume Impacting the Watercourse.				
🗌 Yes	X No						
Describe Cause of Problem and Remedial Acti Water transfer pump broke down. I Describe Area Affected and Cleanup Action T Leak was contained to inside the B soil samples and final report.	Pump was repaired aken.* ty firewall. All wat we is true and complete to	ter was rem	knowledge and u	nderstand that	pursuant to NMOO	CD rules and	
regulations all operators are required to report public health or the environment. The acceptar should their operations have failed to adequate or the environment. In addition, NMOCD acce federal, state, or local laws and/or regulations.	nce of a C-141 report by a ly investigate and remedi	the NMOCD mate contaminat	arked as "Final Re ion that pose a thre the operator of n	port" does no at to ground v esponsibility f	t relieve the operat water, surface wate for compliance with	or of liability r, human health h any other	
Signature: V			OIL CONS	SERVATIO	<u>ON DIVISION</u>	<u>I</u>	
Printed Name: Kanicia Carrillo		Approved by	proved by District Supervisor:				
Title: Regulatory Analyst		Approval Da		Expirat	ion Date:		
E-mail Address: kcarrillo@conchoresources.co	om	Conditions of	Approval:		Attached [	3	
Date: 10/07/08 Phone: 432-68	5-4332	Accer	ted for recor	d		··	
Attach Additional Sheets If Necessary Release # 3 of 3		© Tin	NMOCD is of closu	re SEP	Attached [ 302009 1445 P - 345		
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P/VICA 09273 54661