		S	TE INFORMA	TION
		Repor	t Type: Closu	ure Report
General Site In	oformation			
Site:			e #3 Tank Battery	ter - men innen in Grief (* 1997), die stat die
Company:	<u> </u>	COG Opera		· · · · · · · · · · · · · · · · · · ·
	ship and Range			17S R-30E Sec. 16 Unit H
Lease Number		B-2103		
County:		Eddy Coun	ty	رون در
GPS:			32.83727° N	103.96921° W
Surface Owne	r:	State		
Mineral Owner	r:			
Directions:			rsection of Hwy 529 aı miles, turn left 0.3 mile	nd Goat Roper Road (Loco Hills, NM), travel North 0.7 mile es to location.
Release Data:				
Date Released		9/3/2010	n a stariji prata skatila "An"	
Type Release:		BS&W		
Source of Cont	amination:	High winds t	proke support brace,	, for PVC leg of heater treater
Fluid Released	·	60 bbls		
Fluids Recover		50 bbls		
Official Comm	unication:			
Name:	Pat Ellis	n ng mananan ng katalan na di Katalan na kata		Kim Dorey
Company:	COG Operating,	LLC		Tetra Tech
Address:	550 W. Texas Av			1910 N. Big Spring
P.O. Box	000 W. Texas A	ve. ole. 1000		
City:	Midland Texas, 7	9701		Midland, Texas
Phone number:				(432) 631-0348
Fax:	(432) 684-7137			
Email:	pellis@conchore	sources.com		kim.dorey@tetratech.com
Ranking Criter	ia 👘 🥵 🦛 👘			
Depth to Ground	dwater:		Ranking Score	Site Data
<50 ft			20	
50-99 ft	· · · · · · · · · · · · · · · · · · ·		10	
>100 ft.			0	0
WellHead Protec	ction:		Ranking Score	Site Data
	1,000 ft., Private <200	0 ft.	20	Sile Data
	1,000 ft., Private >200		0	. 0
Surface Body of	Water:		Ranking Score	Site Data
<200 ft.			20	
200 ft - 1,000 ft.			10	
>1,000 ft.	<mark>=</mark>		0	0
	otal Ranking Scor	e: 🔨 🖓	0	RECEIVED
T		187 NR2. 4. 24-1	ALL OST DOM W	
		And and the second s	able Soil RRAL (mg	g/kg): 2011
		Benzene	Total BTEX	g/kg): TPHJUN 03 2011
		And and the second s		g/kg): 2011



May 23, 2011

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

Re: Closure Report for the COG Operating LLC., Mesilla State #3, Unit H, Section 16, Township 17 South, Range 30 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 Mesilla State #3 located in Unit H, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83727°, W 103.96921°. 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 September 3, 2010, and released approximately sixty (60) barrels of basic sediment and water (BS&W). The spill was caused when high winds broke a support brace on the PVC water leg of the heater treater causing the PVC line to break. COG personnel replaced the broken PVC line with a steel line. Fifty (50) barrels of standing fluids were recovered. The spill initiated from the battery and breached the facility dike impacting the pad area measuring approximately 175' x 175'. The spill migrated off the south pad into the pasture, impacting an area approximately 20' by 20'. The initial and final C-141 forms are enclosed in Appendix A.

Groundwater

No water wells were listed within Section 16. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' 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 September 22, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of seven (7) auger holes (AH-1 through AH-7) were installed using a stainless steel hand auger to assess the impacted soils. Select 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 B. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, all of the submitted samples were below the RRAL for TPH and BTEX. Auger holes (AH-2, AH-4 and AH-5) had slight chloride concentrations at the surface (0-1') of 327 mg/kg, 206 mg/kg and 818 mg/kg, respectively. The chloride concentrations declined below reporting limit of <200 at 1-1.5' below surface. The remaining auger holes were not vertically defined, with bottom hole chloride concentrations of 3,910 mg/kg at 1-1.5' (AH-1), 9,580 mg/kg at 6-6.5' (AH-6), and 1,510 mg/kg at 5-5.5' (AH-7).

On December 1, 2010, Tetra Tech personnel supervised the installation of three soil borings (SB-1, SB-2 and SB-3) utilizing an air rotary drilling rig. Soil samples were collected to define the impact of the chloride concentrations in the vicinity of AH-1, AH-6 and AH-7. Referring to Table 1, elevated chloride concentrations significantly declined with depth at 7' (SB-1), 3' (SB-2) and 40' (SB-3). The soil boring locations are shown on Figure 3.



Remedial Work and Closure Request

Tetra Tech personnel supervised the excavation of the site from February 22 through 24, 2011. The soil remediation was performed according to the approved work plan. The excavations included four separate areas within the tank battery and pad location. The locations, approximate dimensions, and excavation depths are shown on Figure 4.

Approximately 875 yards³ were removed and hauled to CRI Inc. for proper disposal. Photos of the excavation are attached. The excavation depths are highlighted in Table 1.

Once excavated, Tetra Tech collected bottom hole confirmation samples (CS-1 through CS-5), as shown on Figure 4. The confirmation sample results are summarized in Table 1. Based on the results, NMOCD requested the bottom of the excavation near CS-1 be lined to cap the area. A 40 mil liner was installed at 4' below surface and backfilled with clean material to grade. A copy of the C-141 (Final) is included in Appendix A.

Based on the remedial activities performed at this site, COG request closure of this site. If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

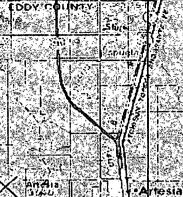
Respectfully submitted, TETRA TECH

Ike Tavarez Senior Project Manager

cc: Pat Ellis – COG cc: Terry Gregston – BLM

FIGURES

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Watehou:

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Numerous small lokes

111111 210 Haach

Avod Sill

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Mesilla State #3,

Gil-ana Baa teid

1-HILLS Topres Loco Hills

Oil and Gas Field -

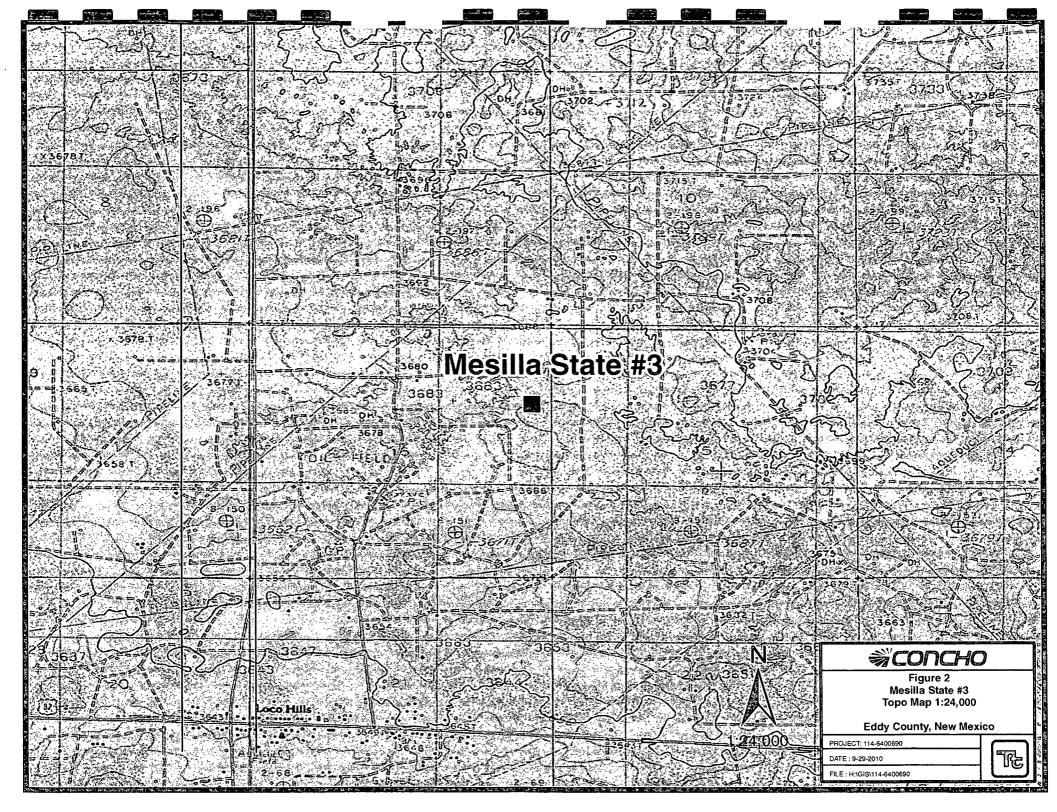
Cil Field

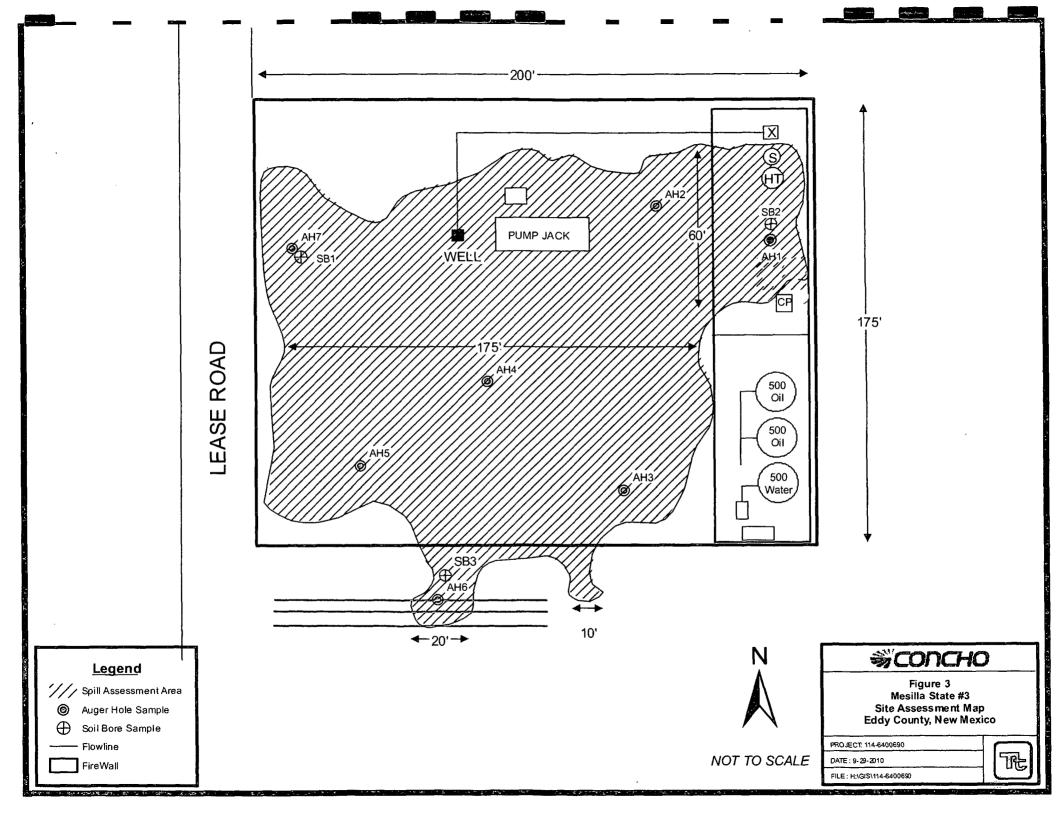
CHIERO

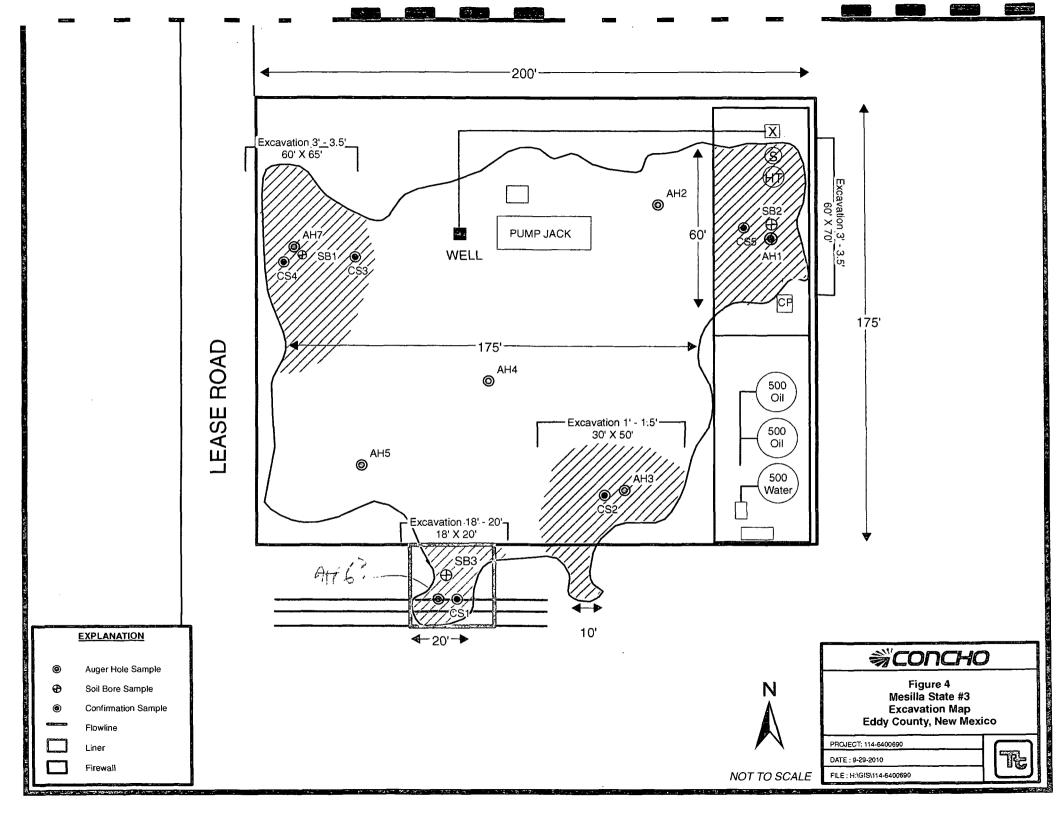
⇒"СОПСНО Figure 1 Mesilla State #3 Topo Map 1:250,000

Eddy County, New Mexico PROJECT: 114-6400690 Rt DATE : 9-29-2010 FILE : H:\GIS\114-640069

Windmi







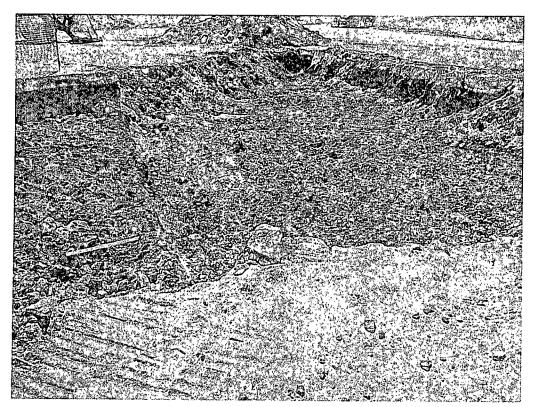
PHOTOGRAPHS

COG Operating LLC Mesilla State #3 Tank Battery Eddy County, New Mexico



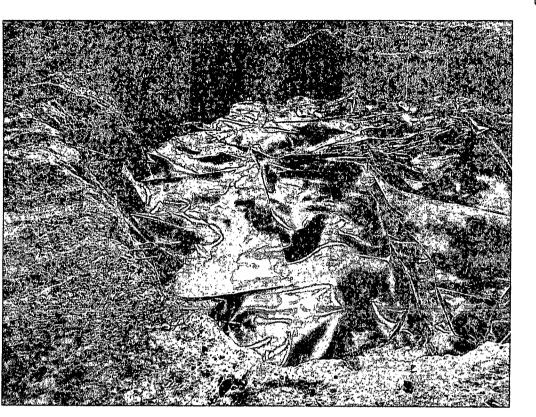
TETRA TECH

Excavated 3' and 5' near SB-1

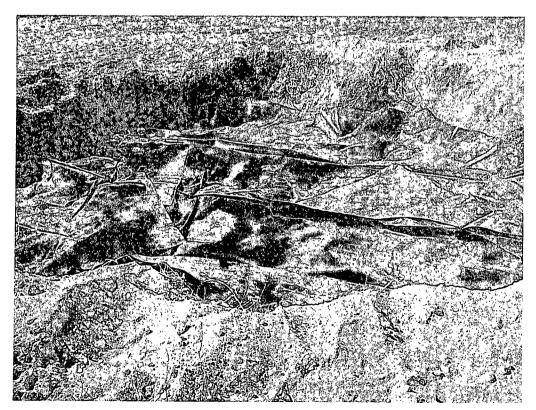


Area near SB-1

COG Operating LLC Mesilla State #3 Tank Battery Eddy County, New Mexico

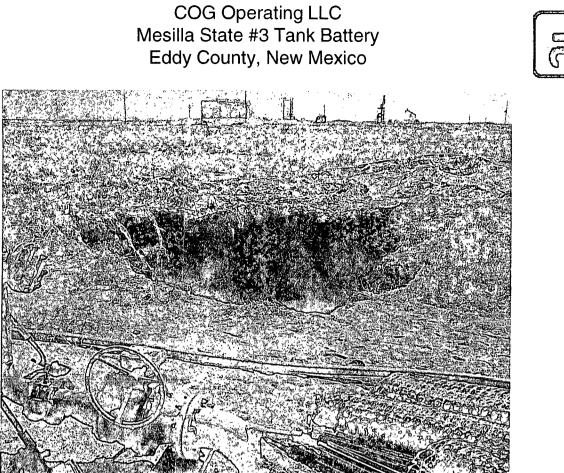


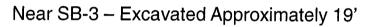
Liner installed at 4' BGS near SB-3

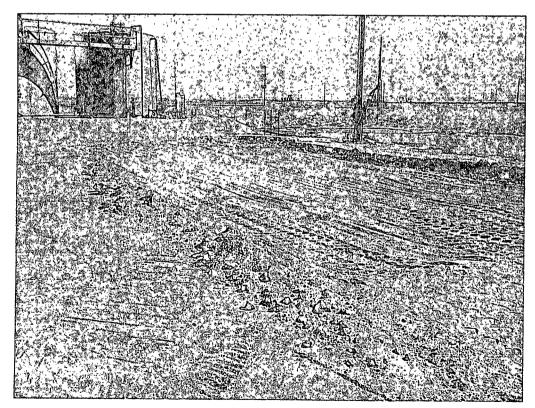


Completed liner installation

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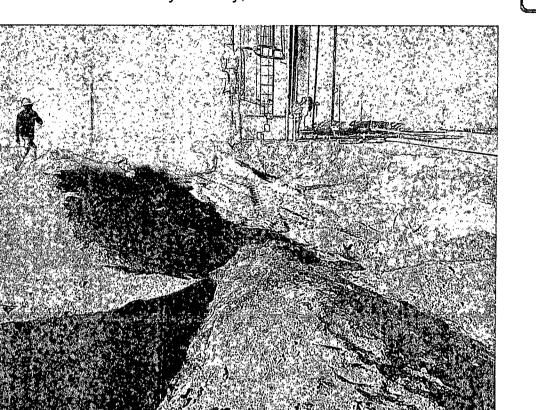




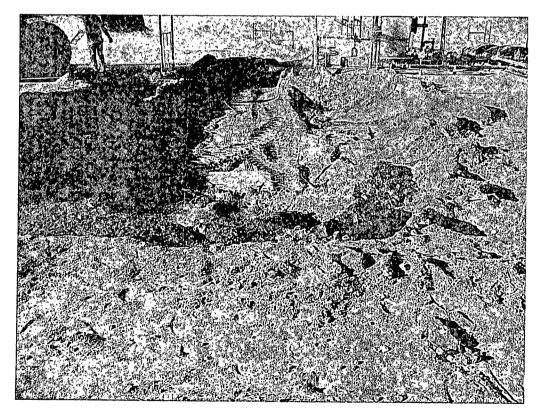


Excavated 1-1.5' near AH-3

COG Operating LLC Mesilla State #3 Tank Battery Eddy County, New Mexico



Excavation inside battery near SB-2



Approximately 2-3' removed near SB-2

S

TABLES

Sample	Sample	Sample	Depth	Soil	Status	TPH (mg/kg)			Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	9/22/2010	0-1'			Х	41.3	71.6	112.9	<0.0100	<0.0100	<0.0100	<0.0100	3,680
	u	1-1.5'			X	-	-	-	-	-	-	-	3,910
CS-5	2/22/2011	3-3.5'		Х		-	-	-	-	-	-	-	<200
SB-1	12/1/2010	3'		Х		-	-	-	-	-	-	-	<200
	11	5'		Х		-	-	-	-	-	-	-	<200
		7'		Х		-	-	-	-	-	-	-	399
	11	10'		Х		-	-	-	-	-	-	-	<200
	1	15'		Х		-	-	-	-	-	-	-	<200
	IJ	20'		Х		-	-	-	-	-	-	-	<200
AH-2	9/2/2010	0-1'		Х		<1.00	<50.0	<50.0	-	-	-	-	327
	U	1-1.5'		Х		-	-	-	-	-	-	-	<200
	a	2-2.5'		Х		-	-	-	-	-	-	-	<200
	11	3-3.5'		X		-	-	-	-	-	-	-	<200
	II	3.5-4'		Х		-	-	-	-	-	-	-	<200

Sample	Sample	Sample	Depth	Soil	Status	TPH (mg/kg)			Benzene To	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	9/22/2010	0-1'			X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	2,420
	11	1-1.5'		Х		-	-	-	-	-	-	-	<200
	n	2-2.5'		Х		-	-	-	-	-		-	<200
	B	3-3.5'		Х		-	-	-	-	-	-	-	<200
	n	4-4.5'		Х		-	-	-	_	-	-	-	<200
		5-5.5'		Х		-	-	-		-	-	-	<200
CS-2	2/22/2011	Bottom Hole	1-1.5'	X			-	-	-	-	•	-	<200
AH-4	9/22/2010	0-1'		X		<1.00	<50.0	<50.0	-	-	-	-	206
		1-1.5'		X		-	-	-	-	-	-	-	<200
	ü	2-2.5'		X		-	-	-	-	-	-	-	<200
	u	3-3.5'		X		-	-	-	-	-	-	-	<200
AH-5	9/22/2010	0-1'		X		<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	818
	13	1-1.5'		X		-	-	-	-	-		-	<200
	ĸ	2-2.5'		X		-	-	-	-	~	-	-	<200
	"	3-3.5'		X		-	-		-	-	-	-	<200
	11	4-4.5'		X		-	-	-	-		-	-	<200

Sample	Sample	Sample	Depth	Soil	Status	TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Chloride	
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-6	9/22/2010	0-1'			Х	6.89	167	173.89	<0.0100	<0.0100	<0.0100	<0.0100	7,400
	11	1-1.5'			Х	-	-	-	•	•	-	-	1,790
	11	2-2.5'			Х	-	-	-	-	-	-	-	1,520
	11	3-3.5'			Х	-	-	-	-	-	-	-	<200
	11	4-4.5'			Х	-	-	-	-	-	+	-	5,540
	14	5-5.5'			X	-	-	-	-	-	-	-	7,580
	"	6-6.5'			X	-	-	-	-	-	•	-	9,580
SB-2	12/1/2010	0-1'			x	-	-	-	_	-	-	-	<200
	EI .	3'			X	-	-	-	-	-	-	-	<200
	u	5'			Х	-	-	-	·-	-	-	-	1,510
	11	7'			Х	-	-	-	-	-	-	-	1,420
	u	10'			Х	-	-	-	-	-	-	-	3,010
		15'			X	-	-	-	-	-	-	-	4,420
	11	20'			X	-	-	-	-	-	-	-	5,970
	*1	25'		X		-	-	-	-	-	-	-	6,310
	11	30'		Х		-	-	-	-	-	-	-	3,800
	"	40'		X		-	-	-	-	-	-	-	312
	LI II	50'	[Х		-	-	-	-	-	-	-	<200
	n	60'		Х		-	-	-	-	<u> </u>	-	1 -	<200
CS-1	2/22/2011	Bottom Hole	19-20'	X		-	-	-	-	-	-	-	4,710

Sample	Sample	Sample	Depth	Soi	Status	Т	PH (mg/k	g)		Toluene	Ethlybenzene	Xylene	
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
AH-7	9/22/2010	0-1'			X	<1.00	<50.0	<50.0	+	-	-	-	4,600
	n	1-1.5'			X	-	-			-	-	· -	651
	a	2-2.5'	<u> </u>		X		-	-	-	-	-	•	570
	tî	3-3.5'			X	-	-	-	-		-	-	1,730
	ti	4-4.5'		·	• X •	-	-	-	-	-	-	-	1,360
	ü	5-5.5'			X	-	-	-	-	-	-	-	1,510
SB-3	12/1/2010	0-1'			, X	-	-	-	-	-	-	-	4,630
	11	3'			X	-	-	-	-	-	-	-	5,340
	li li	5'			Х	-	-	-	-	-	-	-	347
	15	7'		X		-	-	-	-	-	-	-	<200
	11	10'		X		-	-	-	-	-	•	-	<200
	u	15'	· · · · · · · · · · · · · · · · · · ·	X		-	-	-	-	-	-	-	233
		20'		Х		-	-	-	-	-	-	-	<200
CS-3	2/22/2011	3-3.5'		X		-	-	-	-	-	-	-	<200
CS-4	2/22/2011	5-5.5'		X		-	-	-	-	-	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

Excavation depths

APPENDIX A

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.

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

				Sa	inta F	e, NM 8/5	005					
	Release Notification and Corrective Action											
						OPERA	TOR	[] Initi	al Report	\boxtimes	Final Report
Name of Co	ompany (COG Operat	ting LLC	· · · · · · · · · · · · · · · · · · ·		Contact Pa	t Ellis					
Address 55	0 W. Tex	as, Suite 130	0 Midla	nd, Texas 79701	1	Telephone I	No. (432) 685-4	4332	_			
		a State #3 Ta				Facility Typ						
Surface Ow	ner: State			Mineral O	wner				Lease 1	No. B-2103		
·····		<u></u>		LOCA	TIO	N OF RE	LEASE					
Unit Letter	Section	Township	Range	Feet from the		h/South Line	Feet from the	East/W	est Line	County		
H	16	175	30Ĕ		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Last	001 2.110	Eddy		
	.	••••••••••••••••••••••••••••••••••••••	L	atitude N 32 50 NAT		° Longitud COF REL		55°				
Type of Rele	ase: BS & V	W				Volume of	Release 60 bbls	;	Volume I	Recovered 5	0 bbls	
Source of Re				······································		Date and H	lour of Occurrent	ce	Date and	Hour of Dis	covery	
						9/3/10			9/3/10 8	:30 a.m.	<u> </u>	
Was Immedi	ate Notice (Yes 🗌	No 🗌 Not Re	quired	If YES, To Mike Brat) Whom? t cher - OCD					
By Whom? J	osh Russo					Date and H	Hour 9/3/10 8:30) a.m.				
Was a Water		ched?					olume Impacting		course.	·		
			Yes 🛛	No		N/A	1 0					
If a Wataraa	waa waa Im	pacted, Descr	ha Fullu s	- <u></u>					REC	EIVE	ᅪ	
N/A	1130 was ini	pacted, Deser	loc r uny.						JUN	03 2011		
Describe Cau	se of Probl	em and Reme	dial Action	n Taken.*			<u></u>	N	MOU			
High winds r	noved a sup	port bracing a	PVC wate	er leg causing the	leg to	break. The PV	C leg was replace	ed with a	steel leg.			
Describe Are	a Affected	and Cleanup A	Action Tak	en.*								
	iner was ins			o define spills ext ought up to surfac								
regulations al public health should their c or the environ	l operators or the envir perations h nment. In a	are required to conment. The ave failed to a	o report an acceptanc dequately CD accep	is true and compl d/or file certain re e of a C-141 report investigate and re tance of a C-141 r	elease i rt by th media	notifications an ne NMOCD m te contaminati	nd perform correc arked as "Final R on that pose a thr	ctive actio Report" do reat to grou	ns for release not release not release not release und water	eases which ieve the oper r, surface wa	may en ator of ter, hur	danger liability nan health
							OIL CON	SERVA	TION	DIVISIC	N	
Signature:												
Printed Name	: Ike Tavar	ez				Approved by	District Supervis	sor:				
Title: Project	Manager					Approval Dat	e:	Ex	piration	Date:		
E-mail Addre	ss: <u>Ike.Tav</u> a	arez@TetraTe	<u>ch.com</u>			Conditions of	Approval:			Attached		
Date:			Phone:	(432) 682-4559								

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

0640 Form C-141

Revised October 10, 2003

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

$(\langle \rangle)$	<u></u>		Rel	ease Notifi	catio	n and Co	orrective A	ction				
						OPERA				al Report	П	Final Repo
Name of Co	ompany	COG OP	ERATIN	IG LLC	1	Contact	P	at Ellis				
Address	550 W.			dland, TX 7970)	Telephone I	No. 432-	230-00	77			
Facility Na	ne	Mesilla Stat	e #3 Tan	k Battery		Facility Typ	oe Tanl	k Batter	у			
Surface Ow	ner State			Mineral (Owner	······································			Lease 1	No. B-21	03	
				LOC	ATIO	N OF RE	LEASE					
Unit Letter H	Section 16	Township 17S	Range 30E	Feet from the	North	/South Line	Feet from the	East/V	Vest Line	County	Eddy	
		I		Latitude 32	50.233	Longitu	ude 103 58.155	1,				
				NAT	FURE	OF REL				11- 2 1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-		
Type of Rele							Release 60bbls			Recovered		
Source of Re			<u></u>			09/03/201		:c		Hour of D 10 8:30 :		y
Was Immedi	ate Notice (Yes [] No 🗌 Not R	.equired	If YES, To		Mike B	ratcher—C	DCD		
By Whom?	Josh Russ)					Jour 09/03/2010			**		
Was a Water	course Rea		Yes 🗵	No		If YES, Vo	olume Impacting t	he Wate	rcourse.			
If a Waterco	arse was Im	pacted. Descr	ibe Fully.	#	<u> </u>							
escribe Cat	ise of Probl	em and Reme	dial Actio	n Taken.*			313 References					
High wind sp steel water le		the supports l	pracing the	e PVC water leg a	and brok	e it in half ca	using the release.	The PV	C water le	eg has been	replace	ed with a new
Describe Are	a Affected	and Cleanup Z	Action Tal	cen.*								
of the well pa been scraped State #3, this contaminatio	ad measurir and the con- well is loca in from the	g approximate ntaminated pa- ated on the sar release and we	ely 200' x d material ne pad as will pres	200° from the ba has been hauled the tank battery, (ent a remediation	ttery tow to the ap (API#) 3 work pl	vards the pum propriate disp 0-015-34538 an to the NM	ecover 50bbls wit pping unit. All star posal facility. (The). Tetra Tech will OCD for approva	nding fh e closest sample l prior to	id has bee well locat the spill si any signi	in recovere ion to the ite are to de ficant remo	d. The v release i elineate ediation	well pad has is the Mesilla any possible work.
regulations a public health should their o or the enviro	ll operators or the envi operations h nment. In a	are required to ronment. The nave failed to a	o report an acceptant idequately ICD accept	nd/or file certain r be of a C-141 report investigate and r	elease n ort by the emediat	otifications a e NMOCD m e contaminati	knowledge and u nd perform correc arked as "Final Re ion that pose a thre re the operator of r	tive acti eport" d eat to gr	ons for rel oes not rel ound wate	eases whic leve the op r. surface y	h may c berator c vater, hi	mdanger of liability uman health
Cianotura		2.1	$\overline{}$	5			OIL CONS	SERV	ATION	DIVISI	ON	
Signature: Printed Nam	e:	Josh	Russo			Approved by	District Superviso	ər:				
Title:		HSE Co	pordinator			Approval Dat	te:	E.	Expiration	Date:		
E-mail Addr	essi	jrusso@conc	horesoure	es.com		Conditions of			·····	Attache	.d [7]	1997 - 1997 - 99 <u>6</u> 4 - 1 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2 - 2
Attach Addi		Pho ets If Necess		32-212-2399		4 						

APPENDIX B

Water Well Data Average Depth to Groundwater (ft) COG -Mesilla State #3 Tank Battery Eddy County, New Mexico

	16 So	outh	:	29 East	1		
6	5	4	3	2	1		6
7	8	9	10	11	12		7
18	17	16	15	14	13		18
19	20	21	22	23	24		19
110 30	29	28	27	26	25		30
31	32	33	34	35	36		31
	17 Sc	outh		29 East	L	ł	
6	5	4	3	2	1		6
7	8	9	10	11	12		7
18	17	16	15	14	13		18
19	20	21	22 80	23	24		19
30	29 210 208'	28	27	26	25		30
31	32	33	34	35 153	36		31
	18 Sc	buth		29 East		I	•
6	5	4	3	2	1		6
7	8	9	10	11	12		7
18	17	16	15	14	13		18
19	20	21	22	23	24		19
30	29	28	27	26	25		30

	16 9	South	:	t	
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 5	South	;		
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16 SITE	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	٦
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 S	outh	31	East	
6	5	4	3	2	1
7	8	9	10	11	12 288
18	17	16	15	14	13 113
19	20	21	22	23	24
30	29	28	27	26	25
31 290	32	33	34	35	36

	17	South	3	31 East	t
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	34 271	35	36

	18 Sc	outh	31	East	
6	5	4	3	2	1
7	8	9	10	11	12 400
18	17	16	15	14 317	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 261	36

New Mexico State Engineers Well Reports

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USGS Well Reports

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Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

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APPENDIX C

Summary Report

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

Report Date: October 13, 2010

Work Order: 10092407

Project Location:Eddy County, NMProject Name:COG/Mesilla State #3 TBProject Number:114-6400690

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
245696	AH-1 0-1'	soil	2010-09-22	00:00	2010-09-23
245697	AH-1 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245698	AH-2 0-1'	soil	2010-09-22	00:00	2010-09-23
245699	AH-2 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245700	AH-2 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245701	AH-2 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245702	AH-2 3.5-4'	soil	2010-09-22	00:00	2010-09-23
245703	AH-3 0-1'	soil	2010-09-22	00:00	2010-09-23
245704	AH-3 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245705	AH-3 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245706	AH-3 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245707	AH-3 4-4.5'	soil	2010-09-22	00:00	2010-09-23
245708	AH-3 5-5.5'	soil	2010-09-22	00:00	2010-09-23
245709	AH-4 0-1'	soil	2010-09-22	00:00	2010-09-23
245710	AH-4 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245711	AH-4 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245712	AH-4 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245713	AH-5 0-1'	soil	2010-09-22	00:00	2010-09-23
245714	AH-5 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245715	AH-5 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245716	AH-5 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245717	AH-5 4-4.5'	soil	2010-09-22	00:00	2010-09-23
245718	AH-6 0-1'	soil	2010-09-22	00:00	2010-09-23
245719	AH-6 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245720	AH-6 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245721	AH-6 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245722	AH-6 4-4.5'	soil	2010-09-22	00:00	2010-09-23
245723	AH-6 5-5.5'	soil	2010-09-22	00:00	2010-09-23
245724	AH-6 6-6.5'	soil	2010-09-22	00:00	2010-09-23
245725	AH-7 0-1'	soil	2010-09-22	00:00	2010-09-23

Report Date: October 13, 2010

Work Order: 10092407

Page Number: 2 of 6

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
245726	AH-7 1-1.5'	soil	2010-09-22	00:00	2010-09-23
245727	AH-7 2-2.5'	soil	2010-09-22	00:00	2010-09-23
245728	AH-7 3-3.5'	soil	2010-09-22	00:00	2010-09-23
245729	AH-7 4-4.5'	soil	2010-09-22	00:00	2010-09-23
245730	AH-7 5-5.5'	soil	2010-09-22	00:00	2010-09-23

	BTEX			TPH DRO - NEW	TPH GRO	
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
245696 - AH-1 0-1'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	71.6	41.3
245698 - AH-2 0-1'					<50.0	<1.00
245703 - AH-3 0-1'	< 0.0100	< 0.0100	< 0.0100	<0.0100	<50.0	<1.00
245709 - AH-4 0-1'					<50.0	<1.00
245713 - AH-5 0-1'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	<50.0	<1.00
245718 - AH-6 0-1'	< 0.0100	< 0.0100	< 0.0100	<0.0100	167	6.89
245725 - AH-7 0-1'					<50.0	<1.00

Sample: 245696 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		3680	mg/Kg	4.00

Sample: 245697 - AH-1 1-1.5'

Param	Flag	Result	Units	RL
Chloride		3910	mg/Kg	4.00

Sample: 245698 - AH-2 0-1'

Param	Flag	Result	Units	\mathbf{RL}
Chloride		327	mg/Kg	4.00

Sample: 245699 - AH-2 1-1.5'

Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00

Sample: 245700 - AH-2 2-2.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Report Date: October 13, 2010

Sample: 245701 - AH-2 3-3.5'

	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 245702 - A	AH-2 3.5-4'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 245703 - A	AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		2420	mg/Kg	4.00
Sample: 245704 - A	AH-3 1-1.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 245705 - A	AH-3 2-2.5'			
Param	A H-3 2-2.5' Flag	Result	Units	RL
_	,	Result <200	Units mg/Kg	RL 4.00
Param	Flag			
Param Chloride Sample: 245706 - A	Flag AH-3 3-3.5'			
Param Chloride Sample: 245706 - A	Flag	<200	mg/Kg	4.00
Param Chloride Sample: 245706 - A Param	Flag AH-3 3-3.5' Flag	<200 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 245706 - A Param Chloride	Flag AH-3 3-3.5' Flag AH-3 4-4.5'	<200 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 245706 - A Param Chloride Sample: 245707 - A	Flag AH-3 3-3.5' Flag	<200 Result <200	mg/Kg Units mg/Kg	4.00 RL 4.00
Param Chloride Sample: 245706 - A Param Chloride Sample: 245707 - A Param	Flag AH-3 3-3.5' Flag AH-3 4-4.5' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00
Param Chloride Sample: 245706 - A Param Chloride Sample: 245707 - A Param Chloride	Flag AH-3 3-3.5' Flag AH-3 4-4.5' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00

Sample: 245709 - AH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		206	mg/Kg	4.00
Sample: 245710	- AH-4 1-1.5'			
-		Result	Units	RI
Param Chloride	Flag	<200	mg/Kg	4.00
· · · · · ·				
Sample: 245711	- AH-4 2-2.5'			
Param	Flag	Result	Units	RI
Chloride		<200	mg/Kg	4.00
Sample: 245712	- AH-4 3-3.5'			
Param	Flag	Result	Units	RI
Chloride		<200	mg/Kg	4.00
Sample: 245713 Param Chloride	Flag	Result 818	Units mg/Kg	RL 4.00
Chloride		818	mg/Kg	4.00
Sample: 245714	- AH-5 1-1.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 245715	- AH-5 2-2.5'			
Sample: 245715 Param	- AH-5 2-2.5' Flag	Result	Units	RL
Param		Result <200	Units mg/Kg	RL 4.00
Param Chloride	Flag			
	Flag			

Sample: 245717 - AH-5 4-4.5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 245718	- AH-6 0-1'			
Param	Flag	Result	Units	RL
Chloride		7400	mg/Kg	4.00
Sample: 245719 -	- AH-6 1-1.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		1790	mg/Kg	4.00
Sample: 245720 -	- AH-6 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		1520	mg/Kg	4.00
		Develu	TT - 1 -	זת
Param	- AH-6 3-3.5' Flag	Result	Units mg/Kg	RL
Param		Result <200	Units mg/Kg	RL 4.00
Sample: 245721 - Param Chloride Sample: 245722 -	Flag			
Param Chloride Sample: 245722 -	Flag • AH-6 4-4.5'			
Param Chloride	Flag	<200	mg/Kg	4.00
Param Chloride Sample: 245722 - Param	Flag • AH-6 4-4.5' Flag	<200 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 245722 - Param Chloride Sample: 245723 -	Flag • AH-6 4-4.5' Flag	<200 Result	mg/Kg Units mg/Kg Units	4.00 RL
Param Chloride Sample: 245722 - Param Chloride Sample: 245723 -	Flag • AH-6 4-4.5' Flag • AH-6 5-5.5'	<200 Result 5540	mg/Kg Units mg/Kg	4.00 RL 4.00
Param Chloride Sample: 245722 - Param Chloride Sample: 245723 - Param	Flag • AH-6 4-4.5' Flag • AH-6 5-5.5' Flag	<200 Result 5540 Result 7580	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL
Param Chloride Sample: 245722 - Param Chloride Sample: 245723 - Param Chloride	Flag • AH-6 4-4.5' Flag • AH-6 5-5.5' Flag	<200 Result 5540 Result 7580	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL

Report Date: October 13, 2010

Sample: 245725 - AH-7 0-1'

Param	\mathbf{F} lag	Result	Units	RL
Chloride		4600	mg/Kg	4.00
Sample: 245726	- AH-7 1-1.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		651	mg/Kg	4.00
Sample: 245727	- AH-7 2-2.5'			
Param	Flag	\mathbf{Result}	Units	\mathbf{RL}
Chloride	8	570	mg/Kg	4.00
Chioride			6, 6	
Sample: 245728 Param	- AH-7 3-3.5' Flag	Result	Units	RL
Sample: 245728				
Sample: 245728 Param	Flag	Result	Units	RL
Sample: 245728 Param Chloride	Flag - AH-7 4-4.5'	Result	Units	RL
Sample: 245728 Param Chloride Sample: 245729	Flag	Result 1730	Units mg/Kg	RL 4.00
Sample: 245728 Param Chloride Sample: 245729 Param	Flag - AH-7 4-4.5' Flag	Result 1730 Result	Units mg/Kg Units	RL 4.00 RL
Sample: 245728 Param Chloride Sample: 245729 Param Chloride	Flag - AH-7 4-4.5' Flag	Result 1730 Result	Units mg/Kg Units	RL 4.00 RL

Summary Report

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

Report Date: December 10, 2010

Work Order: 10120608

Project Location:Eddy County, NMProject Name:COG/Mesilla State #3 TBProject Number:114-6400690

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
252360	SB-1 0-1'	soil	2010-12-01	00:00	2010-12-03
252361	SB-1 3'	soil	2010-12-01	00:00	2010-12-03
252362	SB-1 5'	soil	2010-12-01	00:00	2010-12-03
252363	SB-1 7'	soil	2010-12-01	00:00	2010-12-03
252364	SB-1 10'	soil	2010-12-01	00:00	2010-12-03
252365	SB-1 15'	soil	2010-12-01	00:00	2010-12-03
252366	SB-1 20'	soil	2010-12-01	00:00	2010-12-03
252367	SB-2 3'	soil	2010-12-01	00:00	2010-12-03
252368	SB-2 5'	soil	2010-12-01	00:00	2010-12-03
252369	SB-2 7'	soil	2010-12-01	00:00	2010-12-03
252370	SB-2 10'	soil	2010-12-01	00:00	2010-12-03
252371	SB-2 15'	soil	2010-12-01	00:00	2010-12-03
252372	SB-2 20'	soil	2010-12-01	00:00	2010-12-03
252373	SB-3 0-1'	soil	2010-12-01	00:00	2010-12-03
252374	SB-3 3'	soil	2010-12-01	00:00	2010-12-03
252375	SB-3 5'	soil	2010-12-01	00:00	2010-12-03
252376	SB-3 7'	soil	2010-12-01	00:00	2010-12-03
252377	SB-3 10'	soil	2010-12-01	00:00	2010-12-03
252378	SB-3 15'	soil	2010-12-01	00:00	2010-12-03
252379	SB-3 20'	soil	2010-12-01	00:00	2010-12-03
252380	SB-3 25'	soil	2010-12-01	00:00	2010-12-03
252381	SB-3 30'	soil	2010-12-01	00:00	2010-12-03
252382	SB-3 40'	soil	2010-12-01	00:00	2010-12-03
252383	SB-3 50'	soil	2010-12-01	00:00	2010-12-03
252384	SB-3 60'	soil	2010-12-01	00:00	2010-12-03

Sample: 252360 - SB-1 0-1'

Report Date: December 10, 2010		Work Order: 10120608		Page Number: 2 of 5	
Param	Flag	Result	Units	RL	
Chloride		4630	mg/Kg	4.00	
Sample: 252361 -	- SB-1 3'				
Param	Flag	Result	Units	RL	
Chloride	0	5340	mg/Kg	4.00	
Sample: 252362 -	- SB-1 5'				
Param	Flag	Result	Units	RL	
Chloride	8	347	mg/Kg	4.00	
Sample: 252363 -	- SB-1 7'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 252364 - Param Chloride	• SB-1 10' Flag	Result <200	Units mg/Kg	RL 4.00	
Sample: 252365 -	• SB-1 15'				
Param	Flag	Result	Units	RL	
Chloride		233	mg/Kg	4.00	
Sample: 252366 -	SB-1 20'				
Param	Flag	\mathbf{Result}	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 252367 -	SB-2 3'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	

Report Date: December 10, 2010

Sample: 252368 - SB-2 5'

Param	\mathbf{Flag}	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 252369	- SB-2 7'			
Param	Flag	Result	Units	RL
Chloride		399	mg/Kg	4.00
Sample: 252370	- SB-2 10'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 252371	- SB-2 15'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 252372	- SB-2 20'			·
Param	- SB-2 20' Flag	Result	Units	
Param		Result <200	Units mg/Kg	
Param Chloride	Flag			
Param Chloride Sample: 252373	Flag - SB-3 0-1'			4.00
Param Chloride Sample: 252373	Flag	<200	mg/Kg	4.00 RL
Param Chloride Sample: 252373 Param	Flag - SB-3 0-1' Flag	<200 Result	mg/Kg Units	4.00 RL
Param Chloride Sample: 252373 Param Chloride Sample: 252374	Flag - SB-3 0-1' Flag	<200 Result	mg/Kg Units	4.00 RL 4.00
Param Chloride Sample: 252373 Param Chloride	Flag - SB-3 0-1' Flag - SB-3 3'	<200 Result <200	mg/Kg Units mg/Kg	4.00 RL 4.00 RL
Param Chloride Sample: 252373 Param Chloride Sample: 252374 Param	Flag - SB-3 0-1' Flag - SB-3 3' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	4.00 RL 4.00 RL
Param Chloride Sample: 252373 Param Chloride Sample: 252374 Param Chloride	Flag - SB-3 0-1' Flag - SB-3 3' Flag	<200 Result <200 Result	mg/Kg Units mg/Kg Units	RL 4.00 RL 4.00 RL 4.00

Report Date: December 10, 2010 Work Order: 10120608 Page Number: 4 of 5 Sample: 252376 - SB-3 7' Param Flag Result Units \mathbf{RL} Chloride 1420 mg/Kg 4.00 Sample: 252377 - SB-3 10' Param Flag Result Units RL Chloride 3010 mg/Kg 4.00Sample: 252378 - SB-3 15' Param Result Units \mathbf{RL} Flag 4420 4.00Chloride mg/Kg Sample: 252379 - SB-3 20' Param Result Units \mathbf{RL} Flag Chloride 5970 mg/Kg 4.00 Sample: 252380 - SB-3 25' Flag Units \mathbf{RL} Param Result Chloride 6310 4.00 mg/Kg Sample: 252381 - SB-3 30' Param Result Units \mathbf{RL} Flag Chloride 3800 4.00 mg/Kg Sample: 252382 - SB-3 40' Param Flag Result Units \mathbf{RL} Chloride 312 4.00mg/Kg Sample: 252383 - SB-3 50' Param Flag RLResult Units Chloride <200 mg/Kg 4.00

Sample: 252384 - SB-3 60'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Summary Report

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

Project Location:Eddy Co., NMProject Name:COG/Mesilla State #3Project Number:114-6400090

			Date	Time	Date
\mathbf{Sample}	Description	Matrix	Taken	Taken	Received
259094	CS-1	soil	2011-02-22	00:00	2011-02-28
259095	CS-2	soil	2011-02-22	00:00	2011-02-28
259096	CS-3	soil	2011-02-23	00:00	2011-02-28
259097	CS-4	soil	2011-02-23	00:00	2011-02-28
259098	CS-5	soil	2011-02-23	00:00	2011-02-28

Sample:	259094	- CS-1
---------	--------	--------

Param	Flag	\mathbf{Result}	Units	RL
Chloride		4710	mg/Kg	4.00

Sample: 259095 - CS-2

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259096 - CS-3

Paranı	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Sample: 259097 - CS-4

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

Report Date: March 17, 2011

Work Order: 11030105

vsis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806)

Report Date: March 17, 2011		Work Order: 11030105	Page	Number: 2 of 2
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 259098	- CS-5			
Param	Flag	Result	Units	RL
Chloride	······································	<200	mg/Kg	4.00