District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410

**HOBBS OCD** State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division

APR 2 3 2013

Form C-141 Revised October 10, 2003

District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

1220 South St. Francis Dr. Santa Fe, NM 87505

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### **Release Notification and Corrective Action**

		<b>OPERA</b>	ГOR	☐ Initia	al Report	$\boxtimes$	Final Report
Name of Company COG Operating L		Contact		at Ellis			
Address 550 W. Texas, Suite 1300 Midlan		Telephone i		230-0077			
Facility Name JC Federal #2 Tank Batte	гу	Facility Typ	e Tan	k Battery			
Surface Owner: Federal	Mineral Owner				No. NMLC- -025-34772		9B
	LOCATIO	ON OF REI	LEASE				
Unit Letter Section Township Range For Section 17S 32E	eet from the Nor	th/South Line	Feet from the	East/West Line	County	Lea	
Lati	tude N 32 49.25 NATURI	1° Longitud E OF RELI		8°			
Type of Release: Produced water	111110111	<del></del>	Release 25 bbls	Volume F	Recovered 20	0 bbls	
Source of Release: Water Tank		Date and H	Iour of Occurrence		Hour of Disc		
		05/16/2010		05/16/201	0 6:00 pm.		
Was Immediate Notice Given?	Not Require	If YES, To		Larry Johnson ()	CD		;
∑ Yes ☐ No	D Not Kedune	<b>4</b>		Larry Johnson –O eoffrey Leking  - (			
By Whom? Josh Russo		Date and F	lour 05/17/2010				
Was a Watercourse Reached?		I	olume Impacting tl	ne Watercourse.			
☐ Yes ☒ No	0	N/A					
If a Watercourse was Impacted, Describe Fully.*		•					
Describe Cause of Problem and Remedial Action Ta	ken.*						
The cause of the problem was due to a power failure	. The issue with th	e power has be	en corrected.				
		<u> </u>					
Describe Area Affected and Cleanup Action Taken.	•						
Tetra Tech personnel inspected and collected sample	s to define the snill	extents Soil th	hat exceeded RRA	L and the elevated	l chlorides w	ere rem	oved and
transported to proper disposal. The site was then bro							
NMOCD for review.						-	
I hereby certify that the information given above is t	rue and complete to	the hest of my	knowledge and ur	aderatond that pure	uant to NIME	CD en	loc and
regulations all operators are required to report and/or							
public health or the environment. The acceptance of	a C-141 report by t	he NMOCD m	arked as "Final Re	port" does not reli	eve the opera	ator of I	iability
should their operations have failed to adequately inv							
or the environment. In addition, NMOCD acceptance federal, state, or local laws and lor regulations.	e or a C-141 report	does not renev	e the operator of r	esponsibility for co	ompiiance wi	ıın any	otner
			OIL CONS	ERVATION	DIVISIO	N	
			<u> </u>	23.07.1.1.07.	2111010	<del></del>	
Signature: 2 / / /							
Printed Name: Ike Tavarez (agent for COG)		Approved by	District Superviso	r:			
Times Turne. In Turne (agent for coo)					•		
Title: Senior Project Manager		Approval Dat	e:	Expiration I	Date:		
	,	C497 /					
E-mail Address: Ike, Tavarez@TetraTech.com		Conditions of	Approval:		Attached		
Date: 3-12-13 Phone: (43	2) 682-4559						
* Attach Additional Sheets If Necessary	_,	·			<del></del>		

District I 1625 N. French Dr., Hobbs, NM 88240 District II

1000 Rio Brazos Road, Aztec, NAI 87410

District IV

1000 Rio Brazos Road, Aztec, NAI 87410

District IV

1220 S. St. Francis Dr., Santa Fe, NM 87505

\* 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

Form C-141 Revised October 10, 2003 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back

side of form

			Rele	ease Notific	eation	and Co	orrective <b>A</b>	ction				
						OPERA:	FOR		⊠ Initia	d Report		Final Repor
Name of Co	mpany	COG OP	ERATIN	G LLC .		Contact	<del></del>	at Ellis				
Address	550 W.	Texas, Suite	:100, Mi	dland, TX 7970	1	lelephone t	No. 432-	230-00	77			
Facility Nat	ne	JC Feder	al Tank I	3attery	I	Facility Typ	e / Tan	k Batter	y			
Surface Ow	ner	Federal		Mineral C	)wner				Lease N	lo. NV	ILC-0	2509-B
				LOCA	ATION	OF RE	LEASE ·					
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/W	est Line	County		
F	22	178	32E		}						Lea	a .
	,			Latitude 32	49.251	Longitu	de 103 45.328	•				
				NAT	URE	OF RELI	EASE					
Type of Rele	ase	Produced V	Vater			Volume of	Release 25bb		Volume F	Recovered	20	0bbls
Source of Re	lease	Water Tar	ık	,	t	fi .	lour of Occurrence	:e		Hour of Dis	-	
Was Immedi	ata Mari ca	ret	<del>"</del>			05/16/2010			05/16/20	0 6	00 p.n	1.
was inineor	ate monte		Yes [	No 🗌 Noi Re	equired	IFYES, To	vinoin?	Larry Io	ohnson – O	CD		
									Leking - 0			
By Whom?	Josh Ru:					Date and F	lour 05/17/2	2010	5:53			
Was a Water	course Read		· 157	1		If YES. Ve	dome Impacting t	he Wate	reourse.			
			Yes 🗵									
If a Watercot	arse was Im	pacted, Descr	ibe Fully.	•								
						•						
Describe Cau	ise of Probl	em and Reme	dial Actio	n Taken,*			,		•			
Tt	ممامات مدان	n	namar fa	ilumu Tha imum ur	والمالة المالة	L L						
The cause of	the problet	n was que to a	power ta	ilure. The issue w	iai aic pa	wer has nee	n corrected.					
Describe Are	a Affected	and Cleanup A	Action Tal	cen.*			•					
Initially 25hb	de wae edo	aen feann a ma	tor tank an	id we were able to		20hhta midh	n unanam tarak	The coil	1	مريدة بالمعماد	sinzul i	nnida da tanle
battery firewa	all and the o	dimensions of	the releas	e were 3° x 10°. (°	The close	est well locar	ion to the release	is the JC	r was comp	L#2, F-22	-17S-3	2E, 2310
FNL 2310 FV	WL, 32.820	96 – 103.7553	3. AP# 3	0-(125-34772) Ter	ra Tech	will sample t	he spill site area t	o deline	ate any pos	sible contai	minatio	on from the
release and w	e will subn	nit a remediati	on work p	olan to the BEM/N	MOCD	for approval	prior to any signi	ficant re	mediation	work.		
			•									
Thereby certi	fy that the	information gi	ven above	is true and comp	lete to th	e best of my	knowledge and u	nderstan	d that purs	uant to NM	OCD i	rules and
regulations a	Il operators	are required t	o report at	id/or file certain r	elease no	otifications ar	nd perform correc	tive acti	ons for reli	cases which	maye	:ndanger
public health	or the envi	ronment. The	acceptane	ce of a C-141 repo	ort by the	NMOCD m	arked as "Final R	epon" d	oes not ren	ieve the ope	raior o	of liability
				rinvestigate and re Mance of a C-141								
		ws and/or regu		ABICC OF B C-141	report ac	ACS HOT TOTAL	e the operator or	сархисы	only tor C	anprance v	can an	y other
		· · · · ·			-		OIL CON	SERV	ATION	DIVISIO	)N	
<b>.</b>			1	/ 🤝	-		<u> </u>		, <u></u>	201 1 1011		
Signature:	<del></del>			<del></del>								
Printed Name	e: /	losh	Russo		1	Approved by	District Supervis	or:	•			
7.1.1.100 . 1411	<u> </u>			··· · · · · · · · · · · · · · · · · ·						······································		<del></del>
Title:		HSE C	oordinator	-		Approvai Dat	e:		Expiration	Date:		
G mail Adde	nee.	in contract	harac	, , , , , , , , , , , , , , , , , , ,		Tandlilana =4	F.A. manager 1:					
E-mail Addre		jrusso@conc	moresoure	cs.com		Conditions of	Approvai:			Attachec	ľ 🔲	
Date: 05/1	9/2010		Phone:	432-212-2399								

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

State of New Mexico **Energy Minerals and Natural Resources** 

HOBBS OCD

Form C-141 Revised October 10, 2003

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

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iverease intrincation and Collective Actio	se Notification and Corrective A	ve Action	Corrective	and	Notification	Release
--	----------------------------------	-----------	------------	-----	--------------	---------

			Rele	ease	Notific	atio	n and Co	rrective A	ction				
							OPERA?	FOR	į	Initia	al Report	$\boxtimes$	<b>Final Report</b>
Name of Co	mpany	COG	Operatin	g LL	C		Contact		at Ellis				·
		exas, Suite 1	300 Mid	land,	Texas 797	/01	Telephone N	No. (432)	230-00	77_			
Facility Nat	ne <b>J</b> C	Federal #2	Tank Ba	ittery			Facility Typ	e Tan	ık Batte	ry			
Surface Ow	ner: Feder	ral			Mineral O	wner				J	No. NMLC- -025-34772		99B
					LOCA	TIO	N OF REI	FASE					
Unit Letter	Section	Township	Range	Feet	from the		South Line	Feet from the	Fast/W	est Line	County		
F	22	178	32E						2000		,	Lea	l
	18111111		L	atitu	de N 32 49	9.251	Longitud	e W 104 45.32	8°			<u></u>	
							OF RELI						
Type of Rele	ase: Produc	ed water					Volume of	Release 15 bbls			Recovered 1		
Source of Re	lease: Wate	er Tank					1	our of Occurrence			Hour of Disc		
Was Immedi	ate Notice C	Siyan?					06/10/2010 If YES, To			06/10/201	10 12:30 pm	1.	
Trus Illinicus	ate Monec C		Yes 🗌	No	☐ Not Re	quired	11 123, 10		Larry Jo	hnson –O	CD		,
										Lek <u>ing</u> - (	OCD		
By Whom? J Was a Water		had2						our 06/10/2010 lume Impacting the				<del></del>	
was a water	course Reac		Yes 🏻	No			N/A	nume impacting u	ne water	course.			
If a Watercou	irse was Imp	pacted, Descri	be Fully.*	ŧ			···-	· · · · · · · · · · · · · · · · · · ·				_	
Describe Cau	se of Proble	em and Remed	lial Action	1 Take	n.*	_							
The water tar		Federal #2 Ta	nk Battery	y overt	flowed. Thi	s occur	теd because tl	ne water trucks die	d not arri	ive in time	e to haul off	the wat	er from
Describe Are	a Affected :	and Cleanup A	Action Tak	en.*									
	proper dis							nat exceeded RRA  hackfill material					
regulations a public health should their or or the enviro	II operators or the envir operations hament. In a	are required to onment. The ave failed to a	report an acceptanc dequately CD accep	id/or fi e of a invest	le certain re C-141 reportigate and re	lease n it by the mediat	otifications ar e NMOCD ma e contamination	knowledge and und perform correct arked as "Final Re on that pose a three the operator of r	tive action eport" do eat to gro	ons for rele es not reli und water	eases which ieve the oper r, surface wa	may en ator of ter, hur	danger liability nan health
	///	1/					· · · · · ·	OIL CONS	SERVA	<b>NOITA</b>	DIVISIO	N	
Signature: 4	- //		$\geq $										1
Printed Name	e: Ike Tavar	ez (agent for	COG)				Approved by	District Superviso	or:				
Title: Senior	Project Mar	nager			<u> </u>		Approval Dat	e:	E	xpiration !	Date:		
E-mail Addre	,		ch.com	<u> </u>	÷	_	Conditions of	Approval:			Attached		
Date: 5- Attach Addi	-12- tional Shee			(432)	682-4559			<del></del>			<u> </u>		

District 1
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Sama Fe, NM 87505

#### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C-141 Revised October 10, 2003

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#### Release Notification and Corrective Action

						OPERA?	ror		$\boxtimes$	Initial	Report		Final Re	por
Name of Co		COG OP				Contact		Pat Ellis	S					_
Address				dland, TX 7970		Telephone N		32-230-00	077					
Facility Nar	ne JC I	FEDERAL#	TANK	BATTERY		Facility Typ	c 1	ank Batte	ery					
Surface Ow	ner l	ederal		Mineral C	)wner				Le	ase No	oNMI.	.C029	509B	
				LOCA	TION	OF REI	LEASE							
Unit Letter	Section 22	Township 17S	Range 32E	Feet from the	North/	South Line	Feet from th	e East/	West L	ine	County	Lea		
	,			Latitude 32 4	19.249	Longita	ıde 103 45.3	04		<del></del>				
		•		NAT	URE	OF RELI	EASE							
Type of Rele	asc	Produced Wa	icr			Volume of		obls	Volu	ıme Re	ecovered	141	obls	
Source of Re	lease	Water Tank				Date and I- 06/10/2010	lour of Occur )	ence		and H 0/2010	our of Dis	covery 30 p.m		
Was Immedia	ne Notice (					If YES, To	Whom?							
		$\boxtimes$	Yes L	] Ne ⊠ Not Ro	equired			Larry . Geoffre	Johnson Lakir					
By Whom?	Iosh R						lour 06/10/20		5:33 p.1					
Was a Water	course Read		Yes 🗵	) No		If YES, Vo	olume Impacti	ng the Wa	tereour	SC.				
If a Watercoo	rse was ho	pacted, Descri	he Fully.	<u> </u>				<del></del>		<del></del>			<u> </u>	
The water tar	ik at the IC k.		nk Batter	y overflowed. Thi	s occurr	ed because th	ne water trucks	s did not a	rrive in	time t	o haul off	the war	ier from	
initially 15bb truck, The pi FEDERAL # area to define significant re	ols of produced was 2, UNIT F. ate any pos- mediation v	ter in this area SEC.22-T17S sible contamin work.	released, has an es -R32E, 2 nation from	and contained, in timated chloride of 310 FNL 2310 FV in the release and	concentra VL, API we will	ation of 135.5 # 30-025-347 present a rem	500 mg/l. (Th 72, 32.820965 ediation work	e closest w 59 -403.7: pian to th	ere abk vell loca 55331) ie BLM	ation to Tetra /NMO	o this tank Tech will: CD for ap	battery sample proval	r in the JC the spill si prior to an	ic
regulations at public health should their or or the environ	l operators or the envi operations h innent. In a	are required to ronment. The nave failed to a	report at acceptance dequately CD accep	is true and comp ind/or file certain re- ce of a C-141 report investigate and re- stance of a C-141	elease nort by the emediate	otifications a NMOCD in contaminati	nd perform co arked as "Fina on that pose a e the operator	rective ac d'Report" threat to g of respons	tions for does no ground sibility	or relea n relie water, for cor	ises which we the ope surface wa inpliance w	may entor of iter, hu	ndanger Fliability man bealth	1
		<del>つ</del> っ.		·>		4	OIL CO	NSER	VATI	ON I	DIVISIO	)N		
Signature:			1			-								
Printed Name	:://	Josh	Russo	•		Approved by	District Super	rvisor.						
Title:	·	HSE Co	ordinator	·		Approval Da	te:		Expira	nion D	ate;			
E-mail Addre	ess:	jrusso@conc	horesourc	es.com	3	Conditions of	'Approval:				Attached			
Date: 06/16/ Attach Addi		Pho ets If Necess		32-212-2399					<del></del>					

District I 1625 N. French Dr., Hohhs, NM 88240 District II 1301 W. Grand Avenue Artesia, NM 88

District III 1000 Rio Brazos Road, Aztec, NM 87410

1220 S. St. Francis Dr., Santa Fe, NM 87505

Attach Additional Sheets If Necessary

State of New Mexico

Energy Minerals and Natural Resources

APR 2 3 2013

HOBBS OCD

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr.

Santa Fe, NM 87505 RECEIVED

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			Kele	ease Notific	cation	and Co	orrective A	ction		
•						OPERA'	ГOR	☐ Initia	l Report 🔲 Final I	Report
Name of Co	ompany	COG	Operatin	g LLC	{	Contact	F	at Ellis		
				land, Texas 79		Telephone 1		230-0077		
Facility Na	me JC	Federal #2	Tank Ba	ittery		Facility Typ	<u>e Tar</u>	ık Battery		
Surface Ow	ner: Fede	ral	<del></del>	Mineral (	Owner			l l	o. NMLC-029509B 025-34772	<u></u>
}				LOCA	ATIO	N OF REI	LEASE			
Unit Letter F	Section 22	Township 17S	Range 32E	Feet from the		/South Line	Feet from the	East/West Line	County Lea	
			L			Longitud OF REL	e W 104 45.32 EASE	8°		
Type of Rele	ase: Produc	ed water		142.1	UKL	~~ <del>~</del>	Release 70 bbls	Volume R	ecovered 65 bbls	
			(4"poly tra	nsition in poly ne	eck)		lour of Occurrence	e Date and I	Hour of Discovery 0 11:30 am	<u>_</u>
Was Immedi	ate Notice (					If YES, To	Whom?			
		×	Yes L_	No 🗌 Not Re	equired		C	Larry Johnson –OC Geoffrey Leking  - C		
By Whom? J	osh Russo		·············			Date and H	lour 06/14/2010		7CD	
Was a Water						If YES, Vo	olume Impacting t	he Watercourse.		
			Yes 🛭	No		N/A				
If a Watercon	ırse was Im	pacted, Descr	ibe Fully.*					<u> </u>		
Describe Cau	ise of Proble	em and Reme	dial Action	ı Taken.*						
We had a fail	lure at a 4 in	ich poly disch	arge pipin	g. The poly pipe	e has bee	en repaired an	d put back into se	rvices.		
Describe Are	a Affected	and Cleanup	Action Tak	en.*						
	o proper dis								chlorides were removed as ed a closure report for the	
regulations a public health should their	Il operators or the envir operations h nment. In a	are required to conment. The ave failed to a ddition, NMC	o report an acceptance dequately OCD accep	d/or file certain r e of a C-141 repo investigate and r	elease no ort by the emediate	otifications and NMOCD me contaminati	nd perform correct arked as "Final Roon that pose a three the operator of the	tive actions for rele eport" does not relic eat to ground water, esponsibility for co	ant to NMOCD rules and ases which may endanger eve the operator of liability surface water, human hea mpliance with any other	y
Signat							OIL CONS	SERVATION	DIVISION	
Signature: Printed Name	e: Ike Tavar	ez (agent for	COG)			Approved by	District Superviso	or:		
Title: Senior	Project Mar	nager		<u>-</u>		Approval Dat	e:	Expiration I	Pate:	
E-mail Addre						Conditions of	`Approval:		Attached	
Date:	11-1	د ٍ	Phone:	(432) 682-4559	I				]	

District 1 4 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Aitesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

### State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Form C:141 Revised October 10, 2003

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

#### Release Notification and Corrective Action

						OPERA"	ΓOR		🗵 Initia	al Report		Final Repor
Name of Co		COG OP				Contact	Pa	at Ellis				
Address	550 W.	Texas, Suite	100, Mi	dland, TX 7970	1 .	Felephone 1	No. 432-1	230-00	77			
Facility Na	ne ICF	EDERAL#	2 TANK	BATTERY		Facility Typ	e Tanl	Batte	у			
Surface Ow	mer F	ederal		Mineral C	)wner				Lease N		1.C029: # 30-02	509B 25-34772
				LOCA	TION	OF REI	LEASE		ν .			
Unit Letter F	Section 22	Township 178	Range 32E	Feet from the -2310		South Line North	Feet from the 2310		Vest Line Vest	County	Lea	
		<u> </u>		Latitude 32 4	19.247	Longit	ide 103 45.325					
				NAT	URE	OF REL						
Type of Rele			luced Wat				Release 70hbls			Recovered		
Source of Re			ig (4" poly	y transition in poly	y neck)	06/12/2010		c ,	Date and 06/12/201	Hour of Di 10 11	iscovery :30 a.m.	
Was Immedi	ate Notice C		Yes 🗀	No 🗆 Not'Ro	equired	If YES, To			ohnsonC Leking			
By Whom?	Josh Ri	usso				Date and I	lour 06/14/2010		9:22		·	
Was a Water	course Reac		Yes 🗵	) No		If YES, Vo	dume Impacting t	he Wate	rcourse.			
If a Waterco	urse was lm	pacted. Descr	ite Fully.	•		·			<del></del>			
		em and Reme		Taken.*  g. The poly pipe	has beer	repaired and	d put back into ser	vice.			·	
Describe Arc	a Affected	and Cleanup /	Action Tak	(en.* )					<del>-</del>	<del></del>	~	
of produced into the past the spill site	water with a are to a 10% area to delin	i vacuum truci x 15° area whe	k. The rel ere the flui ible contai	om the discharge ease caused a ligh id collected. The mination from the	n 80° x 8 chloride	0" skim area content of th	on the pad location or produced water	on whic release	h then flow d is 135,50	red to a 31 a 0 mg/l, Te	x 420° el ara Tech	hannel off a will sample
regulations a public heald should their or the enviro	di operators nor the environement operations homent. In a	are required to ronment. The save failed to a	o report ar acceptance idequately OCD accep	e is true and comp nd/or file certain re- ce of a C-141 report investigate and re- stance of a C-141	elease no ort by the emediate	otifications a 2 NMOCD m 2 contaminati	nd perform correct larked as "Final Room that pose a three	tive act <b>e</b> port" c eat to gr	ions for rel loes not rel round wate	cases whic ieve the op r, surface w	h may ei erator of vaier, hu	ndanger f liability nnan health
Signature:	7	_ [	7_	<u> </u>			OIL CONS	SERV	ATION	DIVISI	<u>ON</u>	
Printed Nam	c:	Josh	Russo			Approved by	District Supervise	or:				
Title:		HSEC	oordinator		1	Approval Dat	e:		Expiration	Date:		
E-mail Addr		jrussotā conc			(	Conditions of	Approval:			Attache	ત □	
	/21/2010 tional She	ets If Necess	hone: ary	432-212-2399								

		S	ITE INFOR	MATIO	N :	RECEIVED
		Re	port Type:	Work I	Plan	FEB 1 7 2011
General Site In	nformation:			7.77 mg 7.04		HORRSOCE
Site:		JC Federal #2	2 Tank Battery			
Company:	· " " " " " " " " " " " " " " " " " " "	COG Operati	ng LLC			
Location:		Unit F	Sec 22	T 17S	R 32E	
Lease Number	r:	NMLC-02509		<u> </u>		
County:		Lea County				· · · · · · · · · · · · · · · · · · ·
Spill GPS	····		32 49.251		<u> </u>	103 45.328
Surface Owne		Federal		·····-·		
Mineral Owner Directions:	<u>r:</u>	<u> </u>	414			rth on SR33/CR126A and turn righ
		(Gasi), 90 0.4 II	iles to location or	ii iigiit (souti	iy or lease road.	
Release Data:	Property of the second of the	r ≜ ∰ Ne( Sp̂		No. of the Assessment	Spill'#2	Spill #3
Date Released.		05/16/10		06/10/10	•	06/12/10
Type Release:		Produced Flui	<u>d</u>	Produced	Fluid	Produced Fluid
Source of Cont		Water Tank		Water Tar	ηk	Poly Line
Fluid Released		25 bbls		15 bbls		70 bbis
Fluids Recover		20 bbls		14 bbls		65 bbls
Official Comm	unication: 🏅 👶 🛝	La Carlo Maria				
Name:	Pat Ellis	<u> </u>	<del></del>		ike Tavarez	<u></u>
Company:	COG Operating, LL	.c			Tetra Tech	
	550 W. Texas Ave.	Ste. 1300			1910 N. Big Spring	
Address:						<del></del>
P.O. Box	Midland Texas, 797	701	·		Midland, Texas	
P.O. Box City:		701	· · · · · · · · · · · · · · · · · · ·		Midland, Texas (432) 661-9826	
Address: P.O. Box City: Phone number: Fax:		r01			Midland, Texas (432) 661-9826	

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	_ 10
>100 ft.	0	/0\
·	1	
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	0
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0

Benzene Total BTEX TPH
10 50 1,000

Approved

Studitury Jehrny

ENV ENCHR

NMOCD-TUBBS

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FEB 17 2011 **HOBBSOCD** 

February 4, 2011

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

Assessment and Work Plan for the COG Operating LLC., JC Re: Federal #2 Tank Battery located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess the spills that occurred at the JC Federal #2 Tank Battery, located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32,820864°, W 103.755378°. The site location is shown on Figures 1 and 2. Three (3) separate spills occurred at the site and were assessed by Tetra Tech. This report details the finding of the investigations.

#### **Background and Chronology**

The JC Federal #2 Tank Battery had three (3) separate reportable releases with three individual initial C-141 forms. The initial C-141's are show in Appendix C. The releases and assessment summaries are show below.

5/16/10 Spill #1 - A water tank overflowed releasing approximately 25 barrels of produced water and 20 barrels of fluid were recovered. The spill was contained within the facility berm impacting an area approximately 3' x 10'.

# TETRA TECH

- 6/10/10 Spill #2 A water tank overflowed releasing approximately 15 barrels of produced water and 14 barrels of fluid were recovered. The spill was contained within the facility berm and the spill encompassed the spill #1 foot print.
- 6/12/10 Spill #3 A 4" poly line failed releasing approximately 70 barrels of produced water and 65 barrels of fluid were recovered. The spill migrated off the facility pad and flowed into the pasture.
- 6/15/10 Tetra Tech installed three (3) auger holes to assess spills #1 and #2 inside the facility berm and installed (7) auger holes on the pad and pasture for spill #3.
- Tetra Tech installed one (1) soil boring inside the facility berm and two (2) soil borings on the pad.

#### Groundwater

No water wells are shown in Section 22, Township 17 South, Range 32 East. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be less than 100' below surface. The depth groundwater map is shown in Appendix A.

#### 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

- DELIN 250

#### Spill #1 and #2

On June 15, 2010, Tetra Tech personnel inspected and sampled the spills inside the facility dike. Three (3) auger holes (AH-1, AH-2 and AH-3) were installed using a stainless steel hand auger to assess the impacted

# TETRA TECH

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 sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-3) exceeded the total BTEX RRAL at 0-1' and declined below the RRAL at 1-1.5' below surface. The TPH also exceeded the RRAL at 0-1' below surface, with a concentration of 1,623 mg/kg. Elevated chloride concentrations were detected in AH-1 and AH-2, but declined with depth below 1,000 mg/kg at 5.0' and 4.0', respectively. Auger holes (AH-1) did show a slight chloride increase of 459 mg/kg at 7.5-8.0' below surface.

On October 19, 2010, Tetra Tech personnel supervised the installation of a boreholes (BH-1) utilizing an air rotary drilling rig to collect deeper samples in the area of AH-1. Soil samples were collected to a depth of 10'. Referring to Table 1, the borehole samples did not show a chloride impact to the area. Based on the data, the area appears to have some chloride hot spots in the soils.

#### Spill #3

On June 15, 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 sampling results are summarized in Table 2. The auger hole locations are shown on Figure 3.

Referring to Table 2, the selected samples for BTEX and TPH were below the RRAL, with the exception of AH-5. The area of AH-5 showed TPH concentrations of 6,051 mg/kg (0-1') and 2,086 mg/kg (1-1.5').

The chloride impact in the vicinity of auger holes (AH-1 and AH-2) were vertically defined and declined to <200 mg/kg at depths of 2.0' and 3.0', respectively. Auger holes (AH-3 and AH-4) were installed at depths of 8.0' to 9.0' below surface and were not vertically defined. The bottom auger hole samples showed a chloride of 1,050 mg/kg at AH-3 and 4,010 mg/kg at AH-4.

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The remaining auger holes (AH-5, AH-6, and AH-7) are located near or on a closed reserve pit located east of the facility pad. The location of the closed reserve pit is shown on Figure 4. The area did show a shallow chloride impact to the soils ranging from 3,360 mg/kg to 7,520 mg/kg at 0-1' and significantly declined with depth. The bottom auger hole samples increased with depth at AH-5 (1,100 mg/kg at 4.0'), AH-6 (1,050 mg/kg at 7.0') and AH-7 (2,100 mg/kg at 6.0'). The chlorides present in the deeper soils appear to be affected by the closed reserve pit.

On October 19, 2010, Tetra Tech personnel supervised the installation of boreholes (BH-1 and BH-2) utilizing an air rotary drilling rig to collect deeper samples and define the areas of AH-3 and AH-4. Referring to Table 2, chloride concentrations declined with depth at BH-1 to <200 mg/kg at 7.0' and slightly increased to 626 mg/kg at 10.0' and declined back down to <200 mg/kg at 15.0' below surface. Boreholes (BH-2) declined to <200 mg/kg at 7.0' below surface.

#### Work Plan

In order to remediate the site, COG proposes to excavate the impacted soils. The goal of the remediation is to establish surface growth and to reduce the environmental liabilities for the protection of the groundwater. For growth, a minimum of 4.0' of impacted soil will be removed from the spill area, if necessary. Concerns exist regarding a deep excavation plan. Since the impacted area may be in the native sand dunes, the proposed excavation depths may not be reached due to wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. If the deeper excavation depths are not reached, a 40 mil liner will be installed at depth of 4' to 5' below surface to cap the impacted area.

COG proposes to remove the impacted soil at depths shown in Table 1 (highlighted in green) and on Figure 5. The area inside the dike will be excavated approximately 3.0' to 4.0' below surface. On the pad area, AH-1, AH-2, AH-5, AH-6 and AH-7 will be excavated approximately 1.0' to 2.0' below surface. The deepest excavation will be performed on the pad in the areas of AH-3 (BH-1) and AH-4 (BH-2) to a depth of approximately 10' below surface. For proper removal, Tetra Tech will run field chlorides and collected confirmation samples for the laboratory analysis. The excavated soil will be transported to proper disposal. Once the areas are excavated to the appropriate depths, the excavations will be backfilled with clean soil.



Upon completion, a final report will be submitted to the NMOCD and BLM. If you have any questions or comments concerning the assessment or the work plan, please call me at (432) 682-4559.

Respectfully submitted,

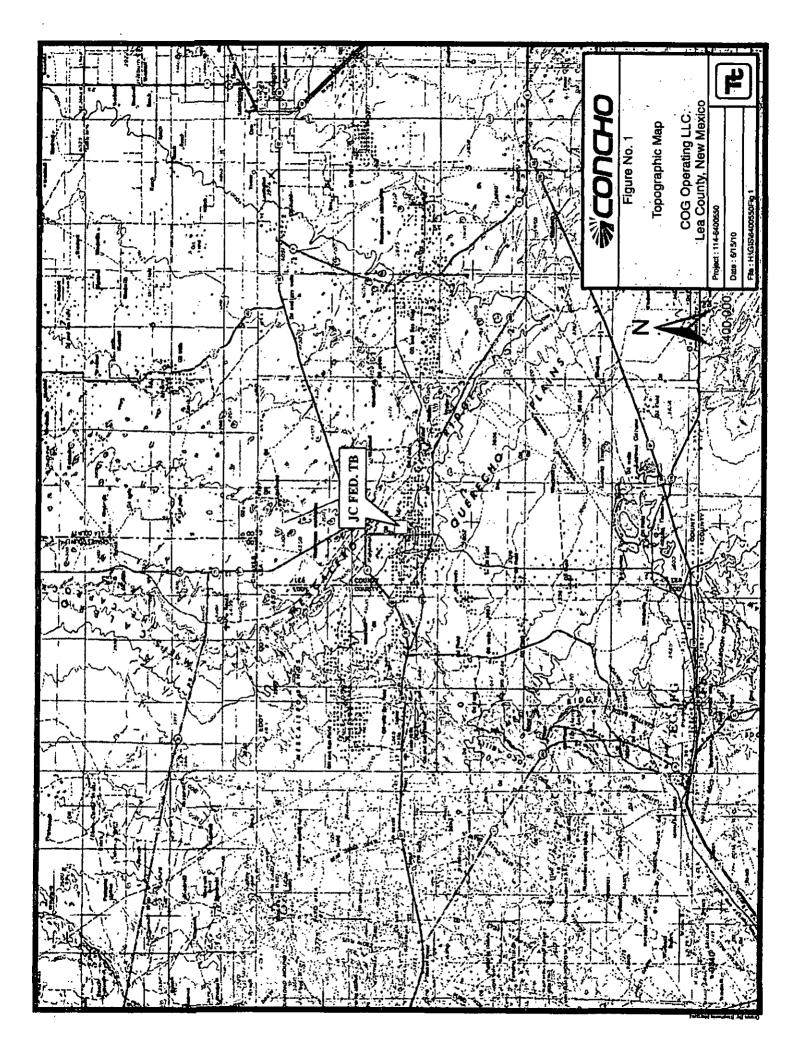
TETRA TECH

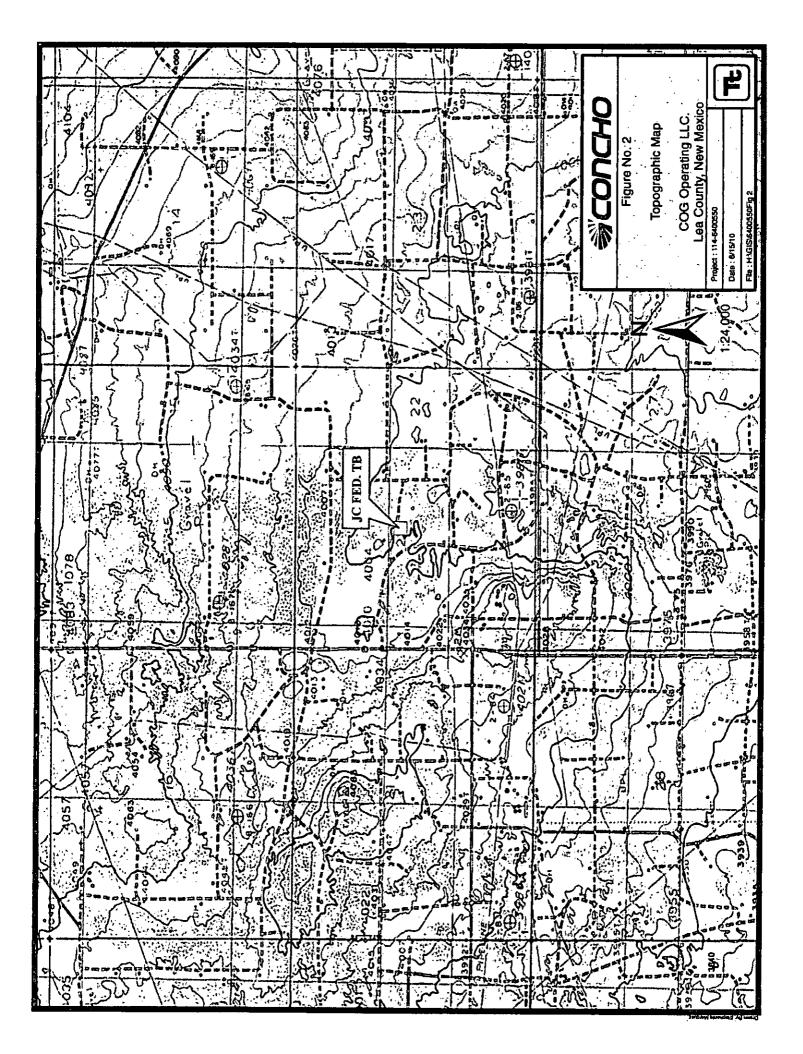
lke Tavarez Project Manager

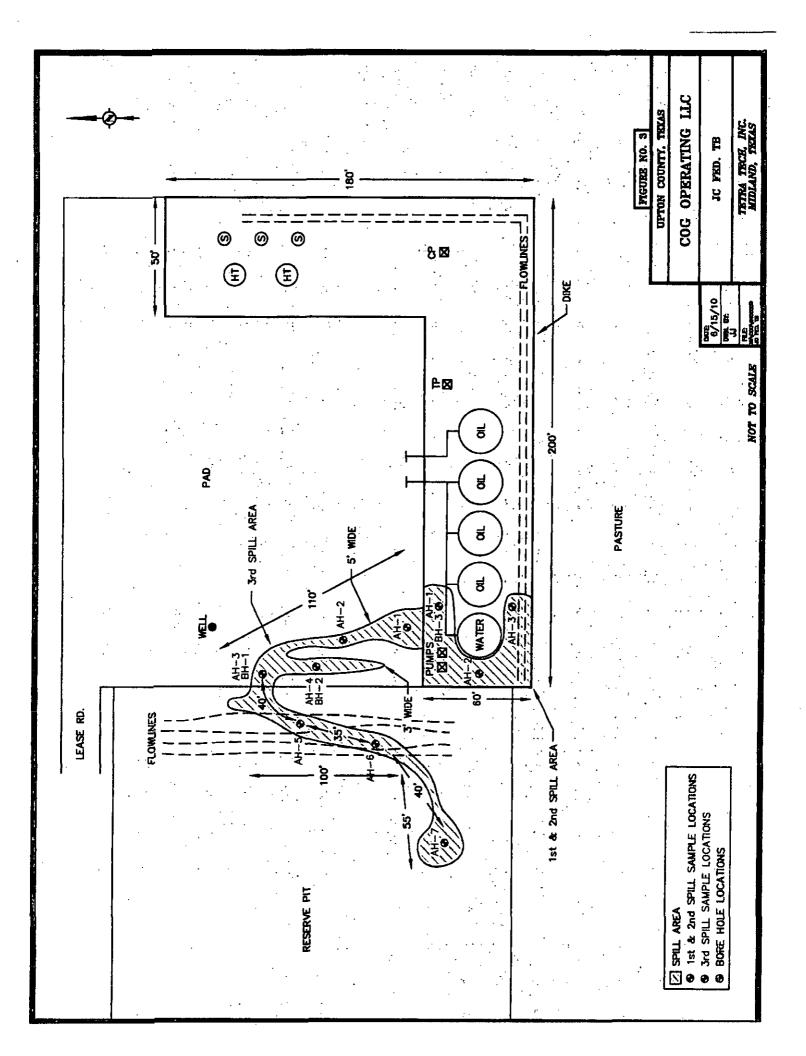
cc: Pat Ellis - COG

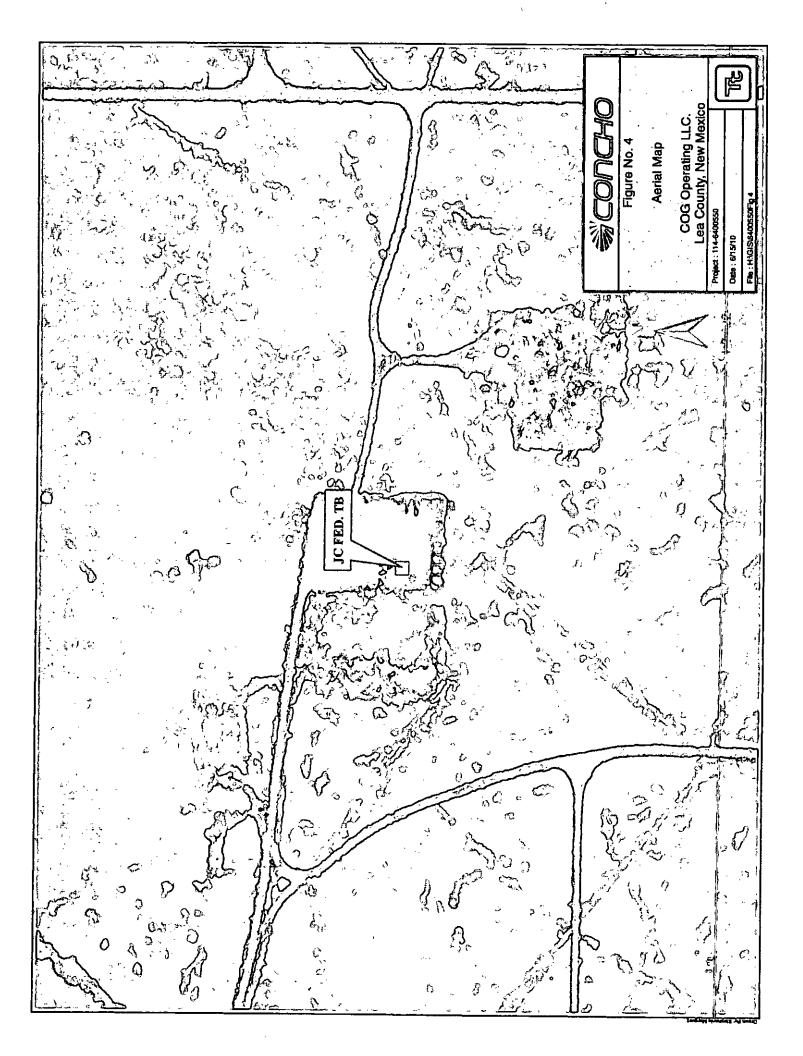
cc: Terry Gregston - BLM

cc: Jim Amos - BLM









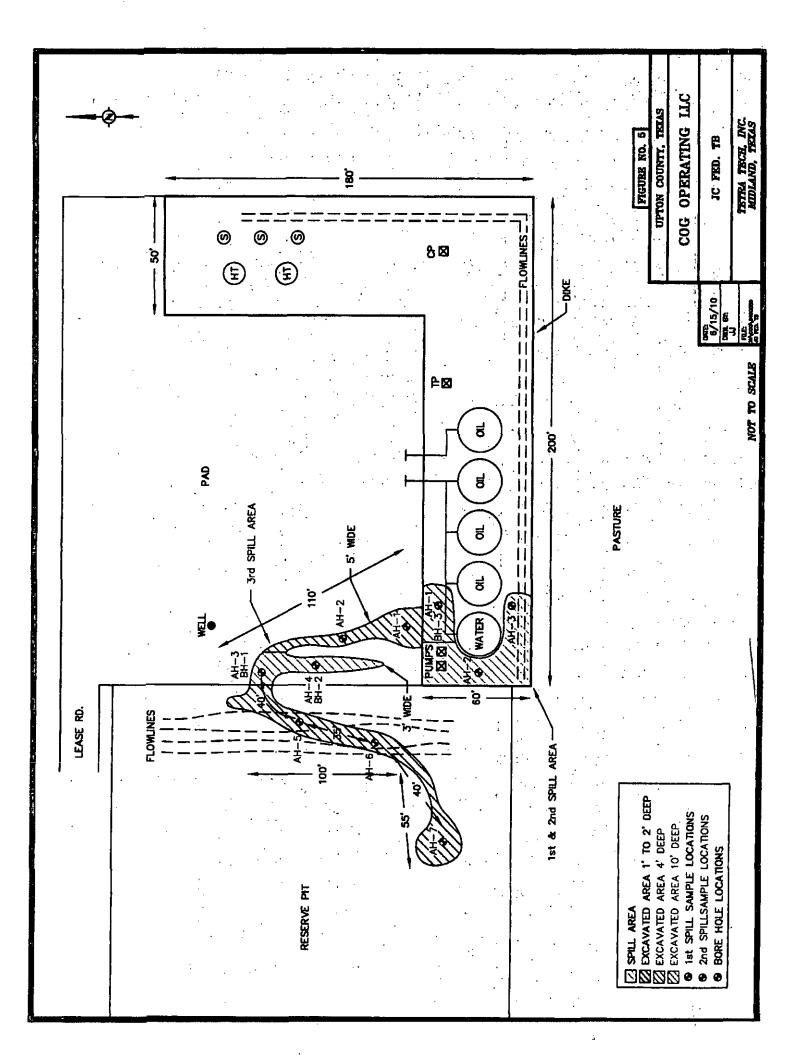


Table 1
COG Operating LLC.
JC Federal Tank Battery
Spiil #1 and #2
LEA COUNTY, NEW MEXICO

Sample	ple Depth		Soil Status	TP.	TPH (mg/kg)	(6	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Depth (ft) (BEB)	_	In-Situ	Removed	OBD	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
0-1,	-	×		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	12,200
1-1.5'		×			٠				•	٠	1,590
2-2.5		×			·		,	,		'	1,230
3-3.5'	_	×		•	-				1	•	1,280
4-4.5'		×		,				,	•	•	1,850
5-5.5	lacksquare	×		,	·	,	,			•	614
6-6.5'	L	×		-	•			,	•	•	297
7-7.5		×		•				•		•	901
7.5-8'		×		•	,	. •	•	•	•	•	459
		!									
0-1.		×		,				,			300
3' 'E	Ļ	×	**	**	•			***			320
5.		×		-	•					•	<200
7.		×			•	•					~200 ~200
10,	٠,	×.	,		,	1	•			•	<b>200</b>

Spill #1 and #2 LEA COUNTY, NEW MEXICO JC Federal Tank Battery COG Operating LLC.

Sample	Sample	Sample	Depth	Soil	Soil Status	린	TPH (mg/kg)	(6)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Ω	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-2	6/15/2010	1-0		×		90.9	67.9	159	<0.0200	0.0944	0.12	0.286	10,400
	,	1-1.5		×		•	•	٠,	٠	•		•	1,500
		2-5.2,		×	,	(*)	-	-	-		_		1,100
		3-3.5	1	×		-	•	•	٠	-	•		2,020
	,	4-4.5'		×		,	-	_	•	-	•	•	970
		5-5.5'		×			1.	•	•				851
		6-6.5		×		•	,	•	•	•	•		252
		7-7.5		×	,	•	-	•	:	-		•	<200
		8-8.5′		×		•	•	-	•		•	•	~200
	·	9-9.5		×		-	-		•		•		<200
AH-3	6/15/2010	0-1.		×		1,300	323	1,623	2.29	33.00	24.5	. 33.6	232
		1-1.5		×		•	•	•	<0.0200	<0.0200	<0.0200	<0.0200	<200
		2-2.5		×		•	•			•			<200
		3-3.5		×	,		•	•		•	•	•	<200
	•	4-4.5		×	,		•	•		•		•	<200
		5-5.5		×		-	•						<200
	·	6-6.5		×				* * *	•	•		•	<200.
		7-7.5'		×		i	•				•	•	<200
		8-8.5		×	*	•	-				•		<200
		9-9.5		×		•	·		-			1	<200

Below Excavation Bottom BEB

Not Analyzed I 🗌

Proposed excavation depth

Table 2
COG Operating LLC.
JC Federal TB
Spill #3
LEA COUNTY, NEW MEXICO

Sample	Sample		Depth	Soil	oil Status	<b> </b> ₽	TPH (mg/kg)	(6)	Benzene	Toluene	Ethiybenzene	Xylene	Chloride
<u>0</u>	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	6/15/2010	0-1,		×		<2.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	4,710
,	-	1-1.5	į	×		,	,		,	1			1,390
		2-2.5		×			٠	•	,`	,	•	•	<200
,		3-3.5		×		•				/ <b>(</b>		· • • ·	<200
,		. 4-4.5		×		•	•		•			•	<200
		. 5-5.5'		×		•		•				•	<200
		6-6.5′		×		•	•	١		,	•		.<200
		7-7.5		×		•	•						200 200
		8-8.5		×		•	•						<200
		9-9.5		×		•		'	,	,	<b>15</b>	•	<200
AH-2	6/15/2010	0-1,		×		R	141	164	<0.0200	<0.0200	<0.0200	0.216	1,570.
		1-1.5'		×		•	•	-		•			.1,240
		2-2.5		×		•		•	•				883
		3-3.5		×		•		-	•	•			<200
		4-4.5		×						•			247
		5-5.5		X ·		•		•		,			<200
	-	6-6.5		×				-	•		,		<200

Table 2
COG Operating LLC.
JC Federal TB
Spill #3
LEA COUNTY, NEW MEXICO

Sample	Sample	Depth	Soil	Soil Status	₽	TPH (mg/kg)	(6	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(тд/кд)	(mg/kg)
6/15/2010	0-1		×	·	089	192	872	0.54	4.17	6.97	10.7	11,100
	1-1.5'	,	×		,	•	•	•		•		3,410
·	2-2.5		×	٧.	,		•	1	•	•	-	421
	3-3.5	-	×		,					•	•	1,130
• 1	4-4.5'		×		•		•	•	•	•	-	1,090
	5-2.5		×				,	•		•	•	1,840
	6-6.5		×		,	,	-	•	•	•		1,980
	7-7.5'		×			,	1	:	'	•	-	1,900
	8-8.5'	1	×			•	.1	41	•	•	•	1,420
	8.5-9'		×		•	$\left[ \cdot \right]$	$\left[ \cdot \right]$	•	•	•	•	1,050
10/19/2010	0-1,		×		,	<u> </u>					•	11,600
	3.		×		,		•	,		-		1,130
	5'		×		•	,	•	•		•		1,390
_	7.		×		_	-	-	•	j)	•		<200
	10,		×		-	•		•	•	•		626
	151		×			;						<200
•	20,		×	. ,	•		1.	•	•	-		343

Table 2
COG Operating LLC.
JC Federal TB
Spill #3
LEA COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soil	Soil Status	₽	TPH (mg/kg)	(6)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
D	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-4	6/15/2010	0-1,		×		<2.00	<50.00 <50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	4,890
		1-1.5'		×				,		,	•		1,480
		2-2.5	,	×			,		•	,	Í	, <b>,</b>	1,800
		3-3.5		×		•	•	•			ξ.		5,820
		4-4.5		×					•	ı	-	•	2,210
		5-5.5		×			,	•	,	, i	•		2,220
	·	6-6.5		×		•	٠	,	•			•	2,760
		7-7.5		×		•	, ;	•	,	,	•		2,270
		8-8.5		×		•	•	•		•	•	•	1,970
		9-9.5'		×		٠	٠	-	•	,	•	N.	4,010
BH-2	10/19/2010	1-0		×				,	•		•		8,590
		3		×		•	•	•	1.	,	•		6,260
		5,		×		•	•				•	-	489
		7.		×		•	•	-	•	•	•	•	<200
		10,		×	<i>'</i>		•		10.0	4		•	<200

Table 2

COG Operating LLC. JC Federal TB	Spill #3	LEA COUNTY, NEW MEXICO
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Chloride	(mg/kg)	3,380	984	791	626	1,100	7,500	6200	208	548	. 632	781	791	1,050	7,520	<200	6200 7000	282	949	1,810	2,100
Xylene	(mg/kg)	0.88			•	•	<0.0200							·	0.47						·,
Ethlybenzene	(mg/kg)	0.335			/		<0.0200	•	•	·		,	,		0.165	.•	,				
Toluene	(mg/kg)	0.496				•	<0.0200	1	٠		•	•		•	0.146	. 1		10.	•		
Benzene	(mg/kg)	<0.200					<0.0200					,	,		<0.0200	•			•		٠,
G G	Total	6,051	2,086				<50.00	١		•			,	•	106	• •			,		
TPH (mg/kg)	DRO	5,820	1,990	-		·	<50.00	,	•	,			•	ı	2	•	•		•	,	,
۴	GRO	231	96.2	•	•	٠	<2.00		•	•		-	•	•	42.4		•	**	•		. , ,
Soil Status	Removed																				
Soil	In-Situ	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×	×
Depth	(BEB)				,			,											Ť		
Sample	Depth (ft)	0-1	1-1.5'	2-2.5'	3-3.5	4-4.5	0-1'	1-1.5	2-2.5	3-3.5'	4-4.5'	5-5.5'	6-6.5	7-7.5'	0-1,	1-1.5'	2-2.5	3-3.5	4-4.5	5-5.5'	5.5-6'
Sample	Date	6/15/2010		,			6/15/2010								6/15/2010						
Sample	<u></u>	AH-5*	. ,			,	*9-HA					,			AH-7*		٠				

# (.)

Below Excavation Bottom Not Analyzed Proposed excavation depth Installed near or on closed reserve pit

## Water Well Data Average Depth to Groundwater (ft) COG - JC Federal #2 Tank Battery, Lea County, New Mexico

	16	South	3	31 E <u>as</u> t	<u> </u>		16 9	South	- 3	2 East			16 S	outh	33	3 East	
9	5	4	[3	2	1	6	[5	<b>~</b> [4	[3	2	1	6	5 180	4	3 130	2	1
							<u> </u>		65	265	265		<u> </u>	150		148	142
7	В	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11	12
				1_	288		<u>L</u> .	1	<u> </u>	1.	215	1	200	<u>L</u>	182	İ	142
0	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
			Ш.	<u> </u>	113	L	}	221	1		215		182	180	175	143	110
19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
				<u> </u>		226		210		210			<u> </u>		<u>.                                    </u>	120	
Ю	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
	_l	_!		_	_ii		1			243		191	<u> </u>	190	130	143	120
11	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35	36
90	l		İ						<u> </u>		260	190	168	i	160	l	L
		South		31 East	واستحصال			South		32 East	T	· · · · · ·	17 S			B East	Ta' a
8	5	4	3	2	1	6	5	4 82		2 60	1 225	6 90	ľ	4	3 155	2 158	1 15
, -	<del>-</del>	9	10	111	12		8	Maljan	10	44.70	<u> </u>	7 167	-	g	10	11 -	40
	8	la.	1,0	111	\int_{1Z}	ľ	18 .	١.	10	11 70	12	7 167	1		110	1"	12
8	17	16	15	14	13	18	17	16	15	14	10		173	161	-15	-	<del>  -</del> -
0	-   ''	10	'3	*	13	1'°	["	1'8	3	114	13	18	17	0 ا	15	14	13
9	20	21	22	23	24	19	20	21	22	23		188 19	180	21	22	23	165
9	120	121	122	123	24	ia .	120	\ <sup>2</sup> '	122	23	24	lia.	1	21	22	1	24
10	29	28	27	26	25	30	29	28	27	26	25	30	190 29	28	27	115 26	25
,,,	25	20	اءً'	26	23		٦	120	<b> </b>	20	25	130	158	20	21	28	23
31	32	33	34	35	36	160' 31	32	33 .	34	35	38	31	32	33	34	35	36
"	32	33	1	30	130	31	32	33 .	134		30	13,	<sup>32</sup> .	133	134	1	30
			271			<u> </u>	<u> </u>		ــــــــــــــــــــــــــــــــــــــ	<u> </u>		<u> </u>			ــــــــــــــــــــــــــــــــــــــ	155	<u> </u>
	18 9	South	3	31 East			18 9	South	3	2 East			18 Se	outh	33	3 East	
	5	4	3	2	1	8	5	4 65	3	2	1 %	6	5	4	3	2	1
	8	9	10	117	12	7 460	8	9	10	111	12	7	8 100	9	10	11	12 143
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	1	1		[-		1	164		428		[	>140	J .	<u> </u>	1	l <sup></sup>	195
0	29	28	27	26	25	30 ·	29	28	27	26	25	30	29	58	27	26	25
1	32	33	34	35	36	31	32	33	34	35	36	35 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 NMOCD Groundwater Data
- 180 Recently installed temporary monitor well.

Page Number: 1 of 5

### **Summary Report**

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

Report Date: July 2, 2010

Work Order: 10061721

Project Location: Lea County, NM

Project Name: COG/JC Federal TB Spill #1 Well #2

Project Number: 114-6400550

			Date	Time.	Date
Sample	Description	Matrix	Taken	Taken	Received
234897	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234898	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234899	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234900	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234901	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234902	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234903	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234904	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234905	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234906	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234907	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234908	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234910	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234911	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234912	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234913	AH-2 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234914	AH-2 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234915	AH-2 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234916	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234917	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234918	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234919	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234920	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234921	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234922	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234923	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234924	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234925	AH-3 9-9.5'	soil	2010-06-15	00:00	2010-06-17
235017	AH-1 7.5-8'	soil	2010-06-15	00:00	2010-06-17

		Ē	BTEX		TPH DRO - NEW	TPH GRO
Ĭ	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(m#/K#)	(mg/Kg)	(mg/Kg)	(mg/Kg)
234897 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
234905 - AH-2 0-1'	< 0.0200	0.0944	0.120	0.286	67.9	90.9
234916 - AH-3 0-1'	2.29	33.0	24.5	33.6	323	1300
234917 - AH-3 1-1.5'	< 0.0200	<0.0200	<0.0200	<0.0200		
Sample: 234897 - AH-	1 0-1'					
Param	Flag		Result		Units	RI
Chloride			12200		mg/Kg	4.00
Sample: 234898 - AH-	1 1-1.5'					
Param	Flag		Result		Units	RI
Chloride			1590		mg/Kg	4.00
Param Chloride	Flag		Result	~ <del>~</del>	Units mg/Kg	RL 4.00
omoride			1230		лцу ку	4.00
Sample: 234900 - AH-	1 3-3.5'					
Param	Flag		Result		Units	RL
Chloride			1280		mg/Kg	4.00
Sample: 234901 - AH-	1 4-4.5'					
Param	Flag		Result		Units	RL
Chloride			1850		mg/Kg	4.00
Sample: 234902 - AH-	1 5-5.5'					
•	***		<b>.</b> .		**	D.

Sample: 234903 - AH-1 6-6.5'

Flag

Param

Chloride

Result

614

Units

mg/Kg

RL

4.00

Report Date: July 2	2, 2010	Work Order: 10061721	Page	Number: 3 of 5
Param	Flag	Result	Units	RL
Chloride		297	mg/Kg	4.00
Sample: 234904 -	AH-1 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		901	mg/Kg	4.00
Sample: 234905 -	AH-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00
Sample: 234906 -	AW-9 1.1 5?			
_		D. D.	<b>77</b> •	70.7
Param Chloride	Flag	Result 1500	Units mg/Kg	RL 4.00
Sample: 234907 -	AH-2 2-2.5'	Result	Units	RL
Chloride		1100	mg/Kg	4.00
Sample: 234908 -	AH-2 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		2020	mg/Kg	4.00
Sample: <b>23491</b> 0 -	AH-2 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		970	mg/Kg	4.00
Sample: 234911 -	AH-2 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		851	mg/Kg	4.00

Report Date: July	2, 2010	Work Order: 10061721	Page	Number: 4 of 5
Sample: 234912 -	AH-2 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		252	mg/Kg	4.00
Sample: 234913 -	· AH-2 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234914 -	AH-2 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234915 -	AH-2 9-9.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234916 -	AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		232	mg/Kg	4.00
Sample: 234917 -	AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234918 -	AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234919 -	AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Report Date: July	2, 2010	Work Order: 10061721	Page	Number: 5 of 5
Sample: 234920 -	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234921 -	- AH-3 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
			•	
Sample: 234922 -	- AH-3 6-6.5'	·		
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Param Chloride	Flag	Result <200	Units mg/Kg	RL 4.00
Sample: 234924 -	- AH-3 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234925 -	- AH-3 9-9.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 235017 -	AH-1 7.5-8'			
Param	Flag	Result	Units	RL
Chloride		459	mg/Kg	4.00

Work Order: 10061722 Page Number: 1 of 9

### **Summary Report**

Ike Tavarez Tetra Tech 1910 N. Big Spring Street

Midland, TX 79705

Report Date: July 2, 2010

Report Date: July 2, 2010

Work Order: 10061722

Project Location: Lea County, NM

Project Name: COG/JC Federal TB Spill #2 4 in. Line

Project Number: 114-6400550

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
234926	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234927	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234928	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234929	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234930	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234931	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234932	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234933	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234934	AH-1 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234935	AH-1 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234936	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234937	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234938	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234939	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234940	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234941	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234942	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234943	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234944	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234945	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234946	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234947	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234948	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234949	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234950	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234951	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234952	AH-3 8.5-9'	soil	2010-06-15	00:00	2010-06-17
234953	AH-4 0-1'	soil	2010-06-15	00:00	2010-06-17
234954	AH-4 1-1.51	soil	2010-06-15	00:00	2010-06-17
234955	AH-4 2-2.5'	soil	2010-06-15	00:00	2010-06-17

Report Date: July 2, 2010 Work Order: 10061722 Page Number: 2 of 9

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
234956	AH-4 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234957	AH-4 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234958	AH-4 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234959	AH-4 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234960	AH-4 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234961	AH-4 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234962	AH-4 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234963	AH-5 0-1'	soil	2010-06-15	00:00	2010-06-17
234964	AH-5 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234965	AH-5 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234966	AH-5 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234967	AH-5 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234968	AH-6 0-1'	soil	2010-06-15	00:00	2010-06-17
234969	AH-6 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234970	AH-6 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234971	AH-6 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234972	AH-6 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234973	AH-6 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234974	AH-6 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234975	AH-6 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234976	AH-7 0-1'	soil	2010-06-15	00:00	2010-06-17
234977	AH-7 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234978	AH-7 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234979	AH-7 3-3.51	soil	2010-06-15	00:00	2010-06-17
234980	AH-7 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234981	AH-7 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234982	AH-7 5.5-6'	soil	2010-06-15	00:00	2010-06-17

	BTEX				TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(nig/Kg)	(mg/Kg)	(mg/Kg)
234926 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	<2.00
234936 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	0.216	141	23.0
234943 - AH-3 0-1'	0.540	4.17	6.97	10.7	192	680
234953 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	< 2.00
234963 - AH-5 0-1'	< 0.200	0.496	0.335	0.880	5820	231
234964 - AH-5 1-1.5'					1990	96.2
234968 - AH-6 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00
234976 - AH-7 0-1'	< 0.0200	0.146	0.165	0.470	64.0	42.4

Sample: 234926 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4710	mg/Kg	4.00

Sample: 234927 - AH-1 1-1.5'

Report Date: July 2, 2010		Work Order: 10061722	Page Number: 3 of 9	
Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00
Sample: 234928 -	- AH-1 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234929	- AH-1 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234930 -	- AH-1 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234931 -	- AH-1 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234932 -	- AH-1 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234933 -	- AH-1 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234934 -	· AH-1 8-8.5'		•	
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Report Date: July 2, 2010		Work Order: 10061722	Pag	Page Number: 4 of 9	
Sample: 234935 - AH	-1 9-9.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 234936 - AH	-2 0-1'				
Param	Flag	Result	Units	RL	
Chloride		1570	mg/Kg	4.00	
Sample: 234937 - AH	-2 1-1.5'				
Param	Flag	Result	Units	RL	
Chloride		1240	mg/Kg	4.00	
Sample: 234938 - AH	-2 2-2.5'		·		
Param	Flag	Result	Units	RL	
Chloride		883	mg/Kg	4.00	
Sample: 234939 - AH	-2 3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 234940 - AH	-2 4-4.5'				
Param	Flag	Result	Units	RL	
Chloride		247	mg/Kg	4.00	
Sample: 234941 - AH-	-2 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 234942 - AH-	2 6-6.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	

Report Date: July 2, 2010	Work Order: 10061722		Page Number: 5 of 9
Sample: 234943 - AH-3 0-1'			
Param Flag	g Result	Units	RL
Chloride	11100	mg/Kg	4.00
•	·		
Sample: 234944 - AH-3 1-1.5'			
Param Flag	g Result	Units	RL
Chloride	3410	mg/Kg	4.00
Sample: 234945 - AH-3 2-2.5'			
Param Flag	Result	Units	RL
Chloride	421	mg/Kg	4.00
Sample: 234946 - AH-3 3-3.5'			
Param Flag		Units	RL
Chloride	1130	mg/Kg	4.00
Sample: 234947 - AH-3 4-4.5'			
Param Flag	Result	Units	RL
Chloride	1090	mg/Kg	4.00
Sample: 234948 - AH-3 5-5.5'			
	<b>.</b>		
Param Flag Chloride	Result 1840	Units mg/Kg	RL 4.00
Ontoride	2020	6/ 1.6	1.00
Sample: 234949 - AH-3 6-6.5'			
Param Flag	Result	Units	RL
Chloride	1980	mg/Kg	4.00
Sample: 234950 - AH-3 7-7.5'			
Param Flag	Result	Units	RL
Chloride	1900	mg/Kg	4.00

Report Date: July 2, 2010		Work Order: 10061722	Pag	Page Number: 6 of 9	
Sample: 234951 - AH-3 8-8	8.5'				
Param	Flag	Result	Units	RL	
Chloride		1420	mg/Kg	4.00	
Sample: 234952 - AH-3 8.5	5-9'		•		
Param	Flag	Result	Units	RL	
Chloride		1050	mg/Kg	4.00	
Sample: 234953 - AH-4 0-	1'				
Param	Flag	Result	Units	RL	
Chloride		4890	mg/Kg	4.00	
Sample: 234954 - AH-4 1-	1.5'				
Param	Flag	Result	Units	RL	
Chloride		1480	mg/Kg	4.00	
Sample: 234955 - AH-4 2-	2.5'				
Param	Flag	Result	Units	RL	
Chloride		1800	mg/Kg	4.00	
Sample: 234956 - AH-4 3-3	3.5'				
Param	Flag	Result	Units	RL	
Chloride		5820	mg/Kg	4.00	
Sample: 234957 - AH-4 4-4	1.5'				
Param	Flag	Result	Units	RL	
Chloride		2210	mg/Kg	4.00	
Sample: 234958 - AH-4 5-5	5.5'				
Param	Flag	Result	Units	RL	
Chloride		2220	mg/Kg	4.00	

Report Date: July 2, 2010	Work Order: 10061722		Page Number: 7 of 9
Sample: 234959 - AH-4 6-6.5'			
Param Flag	Result	Units	RL
Chloride	2760	mg/Kg	4.00
Sample: 234960 - AH-4 7-7.5'			
Param Flag	Result	Units	RL
Chloride	2270	mg/Kg	4.00
Sample: 234961 - AH-4 8-8.5'			
Param Flag	Result	Units	RL
Chloride	1970	mg/Kg	4.00
Sample: 234962 - AH-4 9-9.5'			
Param Flag	Result	Units	RL
Chloride	4010	mg/Kg	4.00
Sample: 234963 - AH-5 0-1'			·
Param Flag	Result	Units	RL
Chloride	3380	mg/Kg	4.00
Sample: 234964 - AH-5 1-1.5'			
Param Flag	Result	Units	RL
Chloride	984	mg/Kg	4.00
Sample: 234965 - AH-5 2-2.5'			
Param Flag	Result	Units	RL
Chloride	791	mg/Kg	4.00
Sample: 234966 - AH-5 3-3.5'			
Param Flag	Result	Units	RL
Chloride	939	mg/Kg	4.00

Report Date: July 2, 2010	Work Order: 10061722	<u></u>	Page Number: 8 of 9
Sample: 234967 - AH-5 4-4.5'			
Param Flag	Result	Units	RL
Chloride	1100	mg/Kg	4.00
Sample: 234968 - AH-6 0-1'			
Param Flag	Result	Units	RL
Chloride	7500	mg/Kg	4.00
Sample: 234969 - AH-6 1-1.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234970 - AH-6 2-2.5'			
Param Flag	Result	Units	RL
Chloride	208	mg/Kg_	4.00
Sample: 234971 - AH-6 3-3.5'			
Param_ Flag	Result	Units	RL
Chloride	548	mg/Kg	4.00
Sample: 234972 - AH-6 4-4.5'			
Param Flag	Result	Units	RL
Chloride	632	mg/Kg	4.00
Sample: 234973 - AH-6 5-5.5'			
Param Flag	Result	Units	RL
Chloride	781	mg/Kg	4.00
Sample: 234974 - AH-6 6-6.5'			
Param Flag	Result	Units	RL
Chloride	791	mg/Kg	4.00

Report Date: July 2, 2010	Work Order: 10061722	F	Page Number: 9 of 9				
Sample: 234975 - AH-6 7-7.5							
Param Fla	g Result	Units	RL				
Chloride	1050	mg/Kg	4.00				
Sample: 234976 - AH-7 0-1'							
Param Fla	g Result	Units	RL				
Chloride	7520	mg/Kg	4.00				
Sample: 234977 - AH-7 1-1.5							
Param Flag	g Result	Units	RL				
Chloride	<200	mg/Kg	4.00				
Sample: 234978 - AH-7 2-2.5							
Param Flag	g Result	Units	RL				
Chloride	<200	mg/Kg	4.00				
Sample: 234979 - AH-7 3-3.5'							
Param Flag	g Result	Units	RL				
Chloride	282	mg/Kg	4.00				
Sample: 234980 - AH-7 4-4.5'							
Param Flag	g Result	Units	RL				
Chloride	949	mg/Kg	4.00				
Sample: 234981 - AH-7 5-5.5'		·					
Param Flag	Result	Units	RL				
Chloride	1810	mg/Kg	4.00				
Sample: 234982 - AH-7 5.5-6'							
Param Flag	Result	Units	RL				
Chloride	2100	mg/Kg	4.00				

Report Date: October 25, 2010 Work Order: 10102018 Page Number: 1 of 3

## **Summary Report**

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705 Report Date: October 25, 2010

Work Order: 10102018

Project Location: Lea County, NM

Project Name: COG/JC Federal TB Spill #1 Well #2

Project Number: 114-6400550

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
247985	BH-1 0-1'	soil	2010-10-19	00:00	2010-10-20
247986	BH-1 3'	soil	2010-10-19	00:00	2010-10-20
247987	BH-1 5'	soil	2010-10-19	00:00	2010-10-20
247988	BH-1 7'	soil	2010-10-19	00:00	2010-10-20
247989	BH-1 10'	soil	2010-10-19	00:00	2010-10-20
247990	BH-1 15'	soil	2010-10-19	00:00	2010-10-20
247991	BH-1 20'	soil	2010-10-19	00:00	2010-10-20
247992	BH-2 0-1'	soil	2010-10-19	00:00	2010-10-20
247993	BH-2 3'	soil	2010-10-19	00:00	2010-10-20
247994	BH-2 5'	soil	2010-10-19	00:00	2010-10-20
247995	BH-2 7'	soil	2010-10-19	00:00	2010-10-20
247996	BH-2 10'	soil	2010-10-19	00:00	2010-10-20
247997	BH-3 0-1'	soil	2010-10-19	00:00	2010-10-20
247998	BH-3 3'	soil	2010-10-19	00:00	2010-10-20
247999	BH-3 5'	soil	2010-10-19	00:00	2010-10-20
248000	BH-3 7'	soil	2010-10-19	00:00	2010-10-20
248001	BH-3 10'	soil	2010-10-19	00:00	2010-10-20

Sample: 247985 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 247986 - BH-1 3'

Report Date: October	er 25, 2010	Work Order: 10102018	Page	Page Number: 3 of 3			
Sample: 247994 -	BH-2 5'						
Param	Flag	Result	Units	RL			
Chloride		489	mg/Kg	4.00			
Sample: 247995 -	BH-2 7'						
Param	Flag	Result	Units	RL			
Chloride		<200	mg/Kg	4.00			
Sample: 247996 -	BH-2 10'						
Param	Flag	Result	Units	RL			
Chloride		<200	mg/Kg	4.00			
Sample: 247997 -	BH-3 0-1'						
Param	Flag	Result	Units	RL			
Chloride		300	mg/Kg	4.00			
Sample: 247998 -	ВН-3 3'						
Param	Flag	Result	Units	RL			
Chloride		320	mg/Kg	4.00			
Sample: 247999 -	BH-3 5'						
Param	Flag	Result	Units	RL			
Chloride		<200	mg/Kg	4.00			
Sample: 248000 -	ВН-3 7'						
Param	Flag	Result	Units	RL			
Chloride		<200	mg/Kg	4.00			
Sample: 248001 -	BH-3 10'						
Param	Flag	Result	Units	RL			
Chloride	<u> </u>	<200	mg/Kg	4.00			

District 1
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztee, NM 87410
District IV
1220 S. St. Francis Dr., Santo Fe, PM 87505

# State of New Mexico Energy Minerals and Natural Resources

Oil Conservation Division 1220 South St. Francis Dr. "Santa Fe. NM 87505 Form C-141
Revised October 10, 2003

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

- Salita	10, 14141 07303	· · · · · · · · · · · · · · · · · · ·
Release Notificati	on and Corrective Actio	on .
· · · · · · · · · · · · · · · · · · ·	OPERATOR	☐ Initial Report ☐ Final Repo
Name of Company COG OPERATING LLC	Contact Pat Ell	is
Address 550 W. Texas, Suite 100, Midland, TX 79701	Telephone No. 432-230-	0077
Facility Name	Facility Type C Tank Bat	
Surface Owner Federal Mineral Owner		Lease No. NMLC-02509-B
		Lease No. NMLC-02303-B
	ON OF RELEASE	, , , , , , , , , , , , , , , , , , ,
Unit Letter   Section   Township   Range   Feel from the   Not	rth/South Line   Feet from the   Eas	a/West Line   County   Lea
17.3 326		Lea -
Latitude 32 49.2	51 Longitude 103 45.328	
NATUR	E OF RELEASE	
Type of Release Produced Water	Volume of Release 25bbls	Volume Recovered 20hbls
Source of Roleage Water Tank	Date and Hour of Occurrence	Date and Hour of Discovery
Sharee of Actionse States Fank	05/16/2010	05/16/2010 6:00 p.m.
Was Immediate Notice Given?	If YES, To Whom?	
✓ Yes ☐ No ☐ Not Require		y Johnson – OCD
By Whom? Josh Russo	Date and Hour 05/17/2010	rey Leking – OCD
Was a Watercourse Reached?	If YES. Volume Impacting the W	5:53 p.m.
☐ Yes ☒ No	in the total and acting the tr	marour.
If a Watercourse was Impacted, Describe Fully,*		
it a symplections was impacted; toescribe runy,	-	
	•	
1.		
Describe Cause of Problem and Remedial Action Taken.*	<i>,</i> •	•
The cause of the problem was due to a power failure. The issue with th	a name has been appropried	
The cause of the problem was due to a power failure. The issue with the	, t	
Describe Area Affected and Cleanup Action Taken.*		
List B. 251 blackers a band from a constant and and a constant to	20041	- 10
Initially 25 hhls was release from a water tank and we were able to reconsistery firewall and the dimensions of the release were 3° x 10°. (The c	locast well location to the salegoe is the	Tiph was completely contained inside the lank
FNL 2310 FWL, 32.82096 - 103.75533. API# 30-025-34772) Terra To	ech will sample the spill site area to del	ineate any possible contamination from the
release and we will submit a remediation work plan to the BEM/NMO	CD for approval prior to any significant	t remediation work.
	· · · · · ·	
I hereby certify that the information given above is true and complete to regulations all operators are required to report and/or tile certain release	o the best of my knowledge and unders	stand that pursuant to NMOCD rules and
public health or the environment. The acceptance of a C-141 report by	the NMOCD marked as "Final Report	" does not relieve the community endanger
should their operations have failed to adequately investigate and remed	iate contamination that pose a threat to	ground water, surface water, human health
or the environment. In addition, NMOCD acceptance of a C-141 repor	t does not relieve the operator of respon	nsibility for compliance with any other
federal, state, or local laws and/or regulations.		
	OIL CONSER	VATION DIVISION
Signature:	4	
Printed Name: Josh Russo	Approved by District Supervisor:	
Title: HSE Coordinator	Approval Date:	Expiration Date:
E-mail Address: jrusso@conchoresources.com	Conditions of Approval:	
	1	Attached <sup>a</sup>

432-212-2399

Date: 05/19/2010

<sup>\*</sup> Attach Additional Sheets If Necessary

District 1
1625 N, French Dr., Hobbs, NM 88240
District II
1301 W, Grand Avenue, Artesia, NM 88210 +
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S, St. Francis Dr., Santa Fe, NM 87505

\* 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 Form C-141 Revised October 10, 2003

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

			Rel	ease Notific	cation	and Co	rrective A	ction				
<u>.                                    </u>	-		92.			<b>OPERA</b>			🛛 Initia	l Report		Final Repor
Name of Co		COG OP				Contact		t Ellis				
Address				dland, TX 7970		Telephone N		230-00		<u></u>		
Facility Nat	ne JC	FEDERAL#	2 TANK	BATTERY	[.]	Facility Typ	e Tanl	Batter	У			
Surface Ow	ner l	ederal		Mineral (	Owner				Lease N	lo. NML	C02950	9B
				LOCA	ATION	OF REI	LEASE					
Unit Letter	Section 22	Township 17S	Range 32E	Feet from the	North/	South Line	Feet from the	East/V	Vest Line	County	Lea	
				Latitude 32 ·	-	Longite OF RELI	ide 103 45.304 EASE					
Type of Rele	asc	Produced Wa	iter			Volume of			Volume R	ecovered	I4bb	ls
Source of Re	lease	Water Tank				Date and I- 06/10/2010	lour of Occurrenc			Hour of Dis		
Was Immedi	ate Notice (		Yes [	]No ⊠ Not R	equired	If YES, To			ohnson—O Leking—C			
By Whom?	Josh R	asso				Date and F	lour 06/10/2010		33 p.m.			
Was a Water	course Rea		Yes 🗵	] No		lí YES, Vo	lume Impacting t	he Wate	ercourse.			
Describe Car	ise of,Probl	pacted. Descr lem and Remo	dial Actio	n Taken.*	is owner.	ed because th	ne water trucks die	t not arr	îre în time	io havi offi	lve u ator	· fizam
inside the tar	ık.			,		· ·				tty natur (iii i	ne water	
Initially 15bl truck. The p FEDERAL # area to deline significant re	ols of produced wa reduced wa 2, UNIT F. rate any pos mediation	ter in this area SEC.22-T17S ssible contamin work.	released, has an es S-R32E, 2 nation fro	and contained, in stimated chloride 310 FNL 2310 FN in the release and	concentra WL, AP# we will;	ation of 135.5 # 30-025-347 present a rem	the tank battery, 500 mg/l. (The clo 72, 32.8209659 – ediation work pla	osest wo .103.75: n to the	ell location ( 5331) Tetra BLM/NMC	to this tank i Tech will s DCD for app	battery ir ample th aroval pr	n the 3C ne spill site nor to any
regulations a public health should their or or the enviro	ll operators or the envi operations b nment. In a	are required to ronment. The nave failed to a	o report a acceptan idequately OCD accep	nd/or file certain to ce of a C-141 report investigate and to stance of a C-141	release no ort by the remediate	otifications are NMOCD in contaminati	knowledge and und perform correct arked as "Final Right on that pose a three the operator of a	tive acti eport" d eat to gr	ons for rele oes not relic ound water.	ases which eve the oper , surface wa	may end ator of li ter, hum	anger iahility an health
Signature:		7.	T/	2.5		**	OIL CONS	SERV	ATION	<u>DIVISIC</u>	N	
Printed Nam	e: /	losh	Russo	•	,	Approved by	District Superviso	OF:				
Title:		HSE C	oordinato	r		Approval Da	e:		Expiration [	Date:		
E-mail Addre		jrusso@conc				Conditions of	Approval:			Attached		
Date: 06/16/	2010	Pho	ine: 4	32-212-2399								

District 1 h
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Aitesia, NM 88210
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1600 Rio Brazos Road, Aztec, NM 87410
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# State of New Mexico Energy Minerals and Natural Resources

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#### Release Notification and Corrective Action

						OPERAT	ΓOR		⊠ lniti	al Report		Final Repor
Name of Co	mpany	COG OP	ERATIN	G LLC		Contact	Pa	at Ellis				
Address				dland, TX <mark>7</mark> 970		Telephone N		230-00	77	,		
Facility Nat	ne ICT	EDERAL#	<u>2 Tank</u>	BATTERY		Facility Typ	e Tanl	k Batte	ry	····		
Surface Ow	ner F	ederal	· · ·	Mineral C	Owner				Lease 1		,	)509B 25-34772
		•		LOCA	ATIO	N OF REI	LEASE		.4			
Unit Letter F	Section 22	Township 17S	Range 32E	Feet from the 2310		/South Line North	Feet from the 2310		Vest Line Vest	County	Lca	
			<del></del>	Latitude 32		Longitu  OF RELI	ide 103 45.325			- <u>-</u>	New Y	
Type of Rele	200	Prov	luced Wat		UKE		Release 70hbls	-	Volume	Recovered (		
Source of Re	lease D	Discharge pipir		transition in pol	y neck)	Date and H 06/12/2010	our of Occurrenc	e		Hour of Dis		· .
Was Immedi	ate Notice (		Yes 🗆	No Not'Re	equired	If YES, To			ohnsonC Leking			
By Whom?	Josh R	usso				Date and H	our 06/14/2010	)	9:22			
Was a Water	course Reac		Yes 🗵	No '		If YES, Vo	lume Impacting t	he Wate	rcourse.			
		em and Reme			has bee	n repaired and	I put back into ser	rvice.				
		and Cleanup /			<del></del>	·····	<u>'</u>				- <del></del>	
of produced into the pasts the spill site:	water with a are to a 10°, area to delir	i vacuum trucl x 15° arca whe	c. The relate the fluit ible contains	case caused a ligh id collected. The	ht 80° x chloride	80" skim area content of th	ooly transition in to on the pad location of produced water present a remedian	on which release	h then flow d is 135.50	red to a 31 \$ 10 mg/l. Ten	120՝ <mark>c</mark> ra Tec	channel off h will sample
regulations a public health should their to or the enviro	B operators or the environment on the or the environment on the operations had been been to be a constant of the operation of the operation of the operation of the operation of the operation of the operations o	are required to rooment. The save failed to a	o report ar acceptance dequately ICD accep	id/or file certain records of a C-141 report investigate and re-	release n ort by th remediat	otifications ar e NMOCD m e contaminati	knowledge and used perform correct arked as "Final Report that pose a three the operator of the operator of the contract of the operator operator opera	tive act eport" c eat to g	ions for rel loes not rel round wate	eases which ieve the oper r. surface wa	may e rator o uer, hi	ndanger If liability Iman kealth
Signature:	7	_ [	7_	<u></u>			· OIL CON:	SERV	ATION	DIVISIO	<u>N</u>	
Printed Nam	e:	Josh	Russo			Approved by	District Supervise	or;				
Title:			oordinator			Approval Dat	e:		Expiration	Date:		_
E-mail Addr	ess;	jrusso/สิเตอกต	lioresoure	es.com	Conditions of Approval:					Attached		
	/21/2010 tional She	ets If Necess	hone:	432-212-2399						<u> </u>		

#### SITE INFORMATION **Report Type: Closure** General Site Information: Site: JC Federal #2 Tank Battery Company: COG Operating LLC Unit F Sec 22 Location: T 17S **R 32E** Lease Number: NMLC-02509 County: Lea County Spill GPS 32.820864 103.755378 Surface Owner: Federal Mineral Owner: From intersection of Hwy 529 and SR33/CR126A, go 2.2 miles north on SR33/CR126A and turn right Directions: (east), go 0.4 miles to location on right (south) of lease road. Release Data: Spill#1 Date Released: 05/16/10 06/10/10 06/12/10 Produced Fluid Type Release: Produced Fluid Produced Fluid Source of Contamination: Water Tank Water Tank Poly Line Fluid Released: 25 bbls 70 bbls 15 bbls Fluids Recovered: 20 bbls 14 bbls 65 bbls The state of the s THE PROPERTY OF THE PROPERTY O Official Communication: Name: Pat Ellis lke Tavarez Company: COG Operating, LLC Tetra Tech Address: One Concho Center 1910 N. Big Spring P.O. Box 600 W. Illnois City: Midland Texas, 79701 Midland, Texas Phone number: (432) 686-3023 (432) 661-9826 Fax: (432) 684-7137 Email: pellis@conchoresources.com ike.tavarez@tetratech.com Ranking Criteria 表的智慧的意思的 Depth to Groundwater: Ranking Score Site Data <50 ft 20 50-99 ft 10 >100 ft. WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. 20

Acceptable Soil RRAL (mg/kg)													
Benzene	Total BTEX	TPH											
10	50 ·	1,000											

Ranking Score

20

10

0

10

Water Source >1,000 ft., Private >200 ft.

Total Ranking Score:

Surface Body of Water:

<200 ft.

>1,000 ft.

200 ft - 1,000 ft.

HOBBS OCD

Site Data

APR 2 3 2013



March 12, 2013

HOBBS OCD

APR 2 3 2013

Mr. Geoffrey Leking **Environmental Engineer Specialist** Oil Conservation Division, District 1 1625 North French Drive Hobbs, New Mexico 88240

RECEIVED

Closure Report for the COG Operating LLC., JC Federal #2 Tank Re: Battery located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess the spills that occurred at the JC Federal #2 Tank Battery. located in Unit F, Section 22, Township 17 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.820864°, W 103.755378°. The site location is shown on Figures 1 and 2. Three (3) separate spills occurred at the site and were assessed by Tetra Tech. This report details the finding of the investigations.

#### **Background and Chronology**

The JC Federal #2 Tank Battery had three (3) separate reportable releases with three individual initial C-141 forms. The initial C-141's are show in Appendix A. The releases and assessment summaries are show below.

Spill #1 - A water tank overflowed releasing approximately 25 barrels 5/16/10 of produced water and 20 barrels of fluid were recovered. The spill was contained within the facility berm impacting an area approximately 3' x 10'.

6/10/10 Spill #2 – A water tank overflowed releasing approximately 15 barrels of produced water and 14 barrels of fluid were recovered. The spill was contained within the facility berm and the spill encompassed the spill #1 foot print.



6/12/10 Spill #3 - A 4" poly line failed releasing approximately 70 barrels of produced water and 65 barrels of fluid were recovered. The spill

migrated off the facility pad and flowed into the pasture.

6/15/10 Tetra Tech installed three (3) auger holes to assess spills #1 and #2

inside the facility berm and installed (7) auger holes on the pad and

pasture for spill #3.

10/19/10 Tetra Tech installed one (1) soil boring inside the facility berm and

two (2) soil borings on the pad.

#### Groundwater

No water wells are shown in Section 22, Township 17 South, Range 32 East. According to the NMOCD groundwater map, the average depth to groundwater in this area appears to be less than 100' below surface. The depth groundwater map 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 1,000 mg/kg.

#### **Soil Assessment and Analytical Results**

#### Spill #1 and #2

On June 15, 2010, Tetra Tech personnel inspected and sampled the spills inside the facility dike. Three (3) auger holes (AH-1, AH-2 and AH-3) 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 C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, auger hole (AH-3) exceeded the total BTEX RRAL at 0-1' and declined below the RRAL at 1-1.5' below surface. The TPH also exceeded the RRAL at 0-1' below surface, with a concentration of 1,623 mg/kg. Elevated chloride concentrations were detected in AH-1 and AH-2, but declined

# TE TETRATECH

with depth below 1,000 mg/kg at 5.0' and 4.0', respectively. Auger holes (AH-1) did show a slight chloride increase of 459 mg/kg at 7.5-8.0' below surface.

On October 19, 2010, Tetra Tech personnel supervised the installation of a boreholes (BH-1) utilizing an air rotary drilling rig to collect deeper samples in the area of AH-1. Soil samples were collected to a depth of 10'. Referring to Table 1, the borehole samples did not show a chloride impact to the area. Based on the data, the area appears to have some chloride hot spots in the soils.

#### Spill #3

On June 15, 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 sampling results are summarized in Table 2. The auger hole locations are shown on Figure 3.

Referring to Table 2, the selected samples for BTEX and TPH were below the RRAL, with the exception of AH-5. The area of AH-5 showed TPH concentrations of 6,051 mg/kg (0-1') and 2,086 mg/kg (1-1.5').

The chloride impact in the vicinity of auger holes (AH-1 and AH-2) were vertically defined and declined to <200 mg/kg at depths of 2.0' and 3.0', respectively. Auger holes (AH-3 and AH-4) were installed at depths of 8.0' to 9.0' below surface and were not vertically defined. The bottom auger hole samples showed a chloride of 1,050 mg/kg at AH-3 and 4,010 mg/kg at AH-4.

The remaining auger holes (AH-5, AH-6, and AH-7) are located near or on a closed reserve pit located east of the facility pad. The location of the closed reserve pit is shown on Figure 4. The area did show a shallow chloride impact to the soils ranging from 3,360 mg/kg to 7,520 mg/kg at 0-1' and significantly declined with depth. The bottom auger hole samples increased with depth at AH-5 (1,100 mg/kg at 4.0'), AH-6 (1,050 mg/kg at 7.0') and AH-7 (2,100 mg/kg at 6.0'). The chlorides present in the deeper soils appear to be affected by the closed reserve pit.

On October 19, 2010, Tetra Tech personnel supervised the installation of boreholes (BH-1 and BH-2) utilizing an air rotary drilling rig to collect deeper samples and define the areas of AH-3 and AH-4. Referring to Table 2, chloride concentrations declined with depth at BH-1 to <200 mg/kg at 7.0' and slightly increased to 626 mg/kg at 10.0' and declined back down to <200 mg/kg at 15.0' below surface. Borehole (BH-2) declined to <200 mg/kg at 7.0' below surface.



#### **Closure Activities**

Based on the approved work plan, Tetra Tech personnel supervised the excavation of the site on March 31, 2011. The excavated areas and depths are highlighted in Table 1 and shown on Figure 5. The final excavation depths of the soil remediation were met as stated in the approved work plan.

The impacted areas inside the tank battery were excavated to a depth of 1.0' to 2.0' below surface. Due to safety concerns, deeper excavation could not perform due to the lines and tanks in the area. The impacted areas on the pad were excavated to depths of 2.0' and 10.0 below surface. The remaining areas (AH-5, AH-6 and AH-7) in the pasture (top of the closed reserve pit) were not accessible to excavated due to the multiple flow lines and lines in the area. Approximately 600 cubic yards of soil were excavated and transported to proper disposal.

Based on the remedial activities performed, COG request closure of the site. A copies of the C-141 (Final's) is included in Appendix A. If you have any questions or comments concerning the remedial activities, please call at (432) 682-4559.

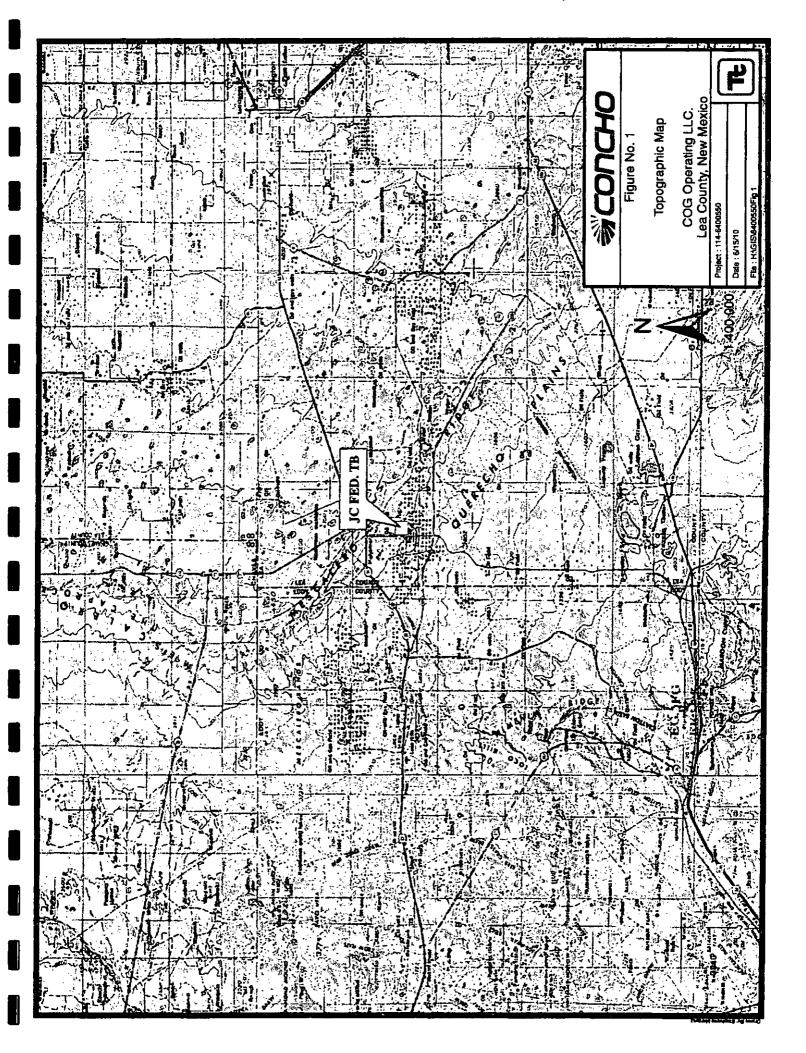
Respectfully submitted,

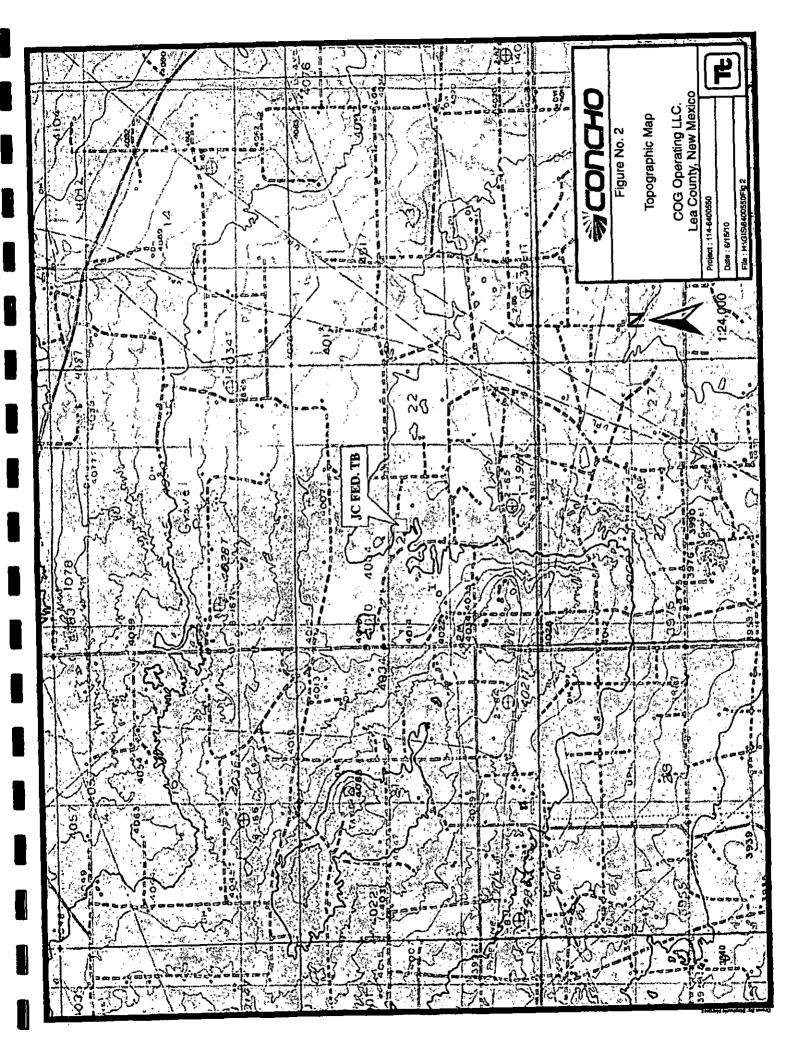
TETRA/TECH

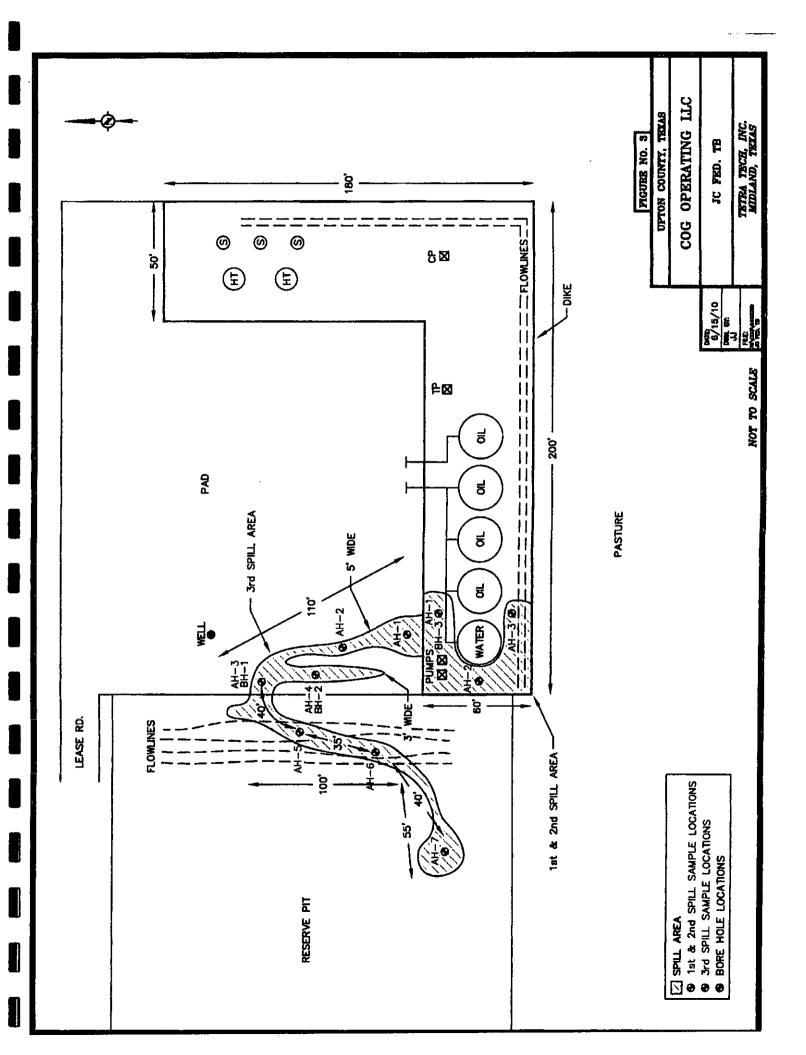
Ike Tavarez

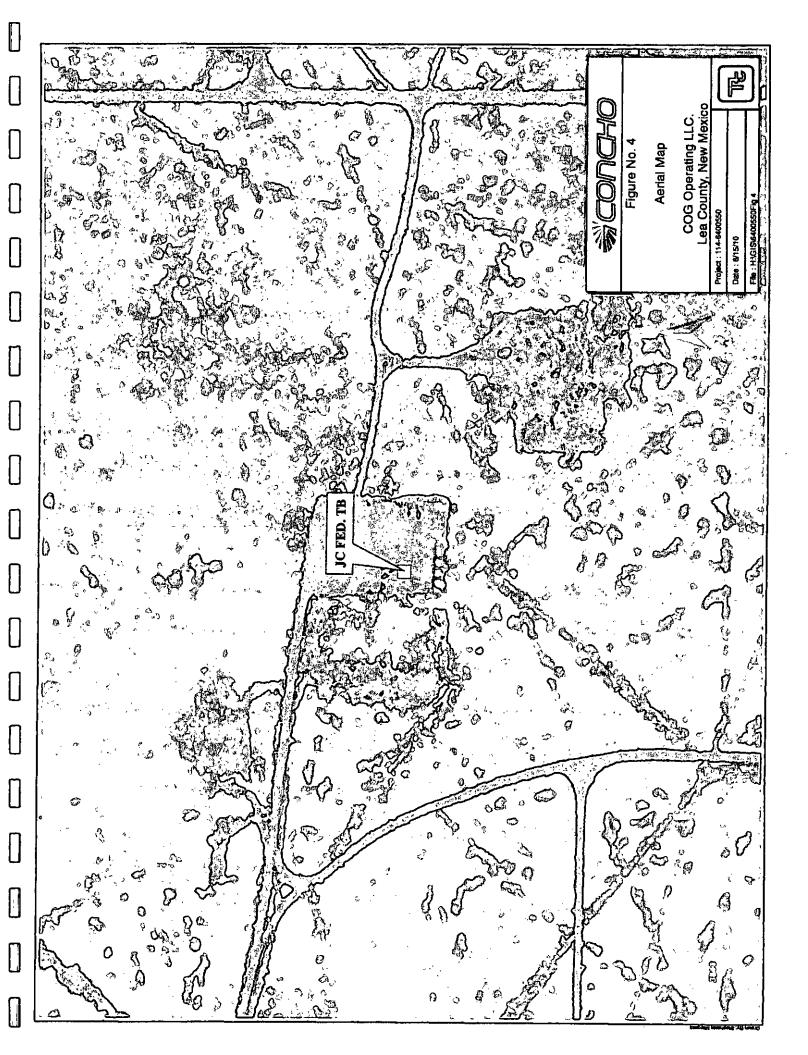
Senior Project Manager

cc: Pat Ellis - COG cc: Jim Amos - BLM









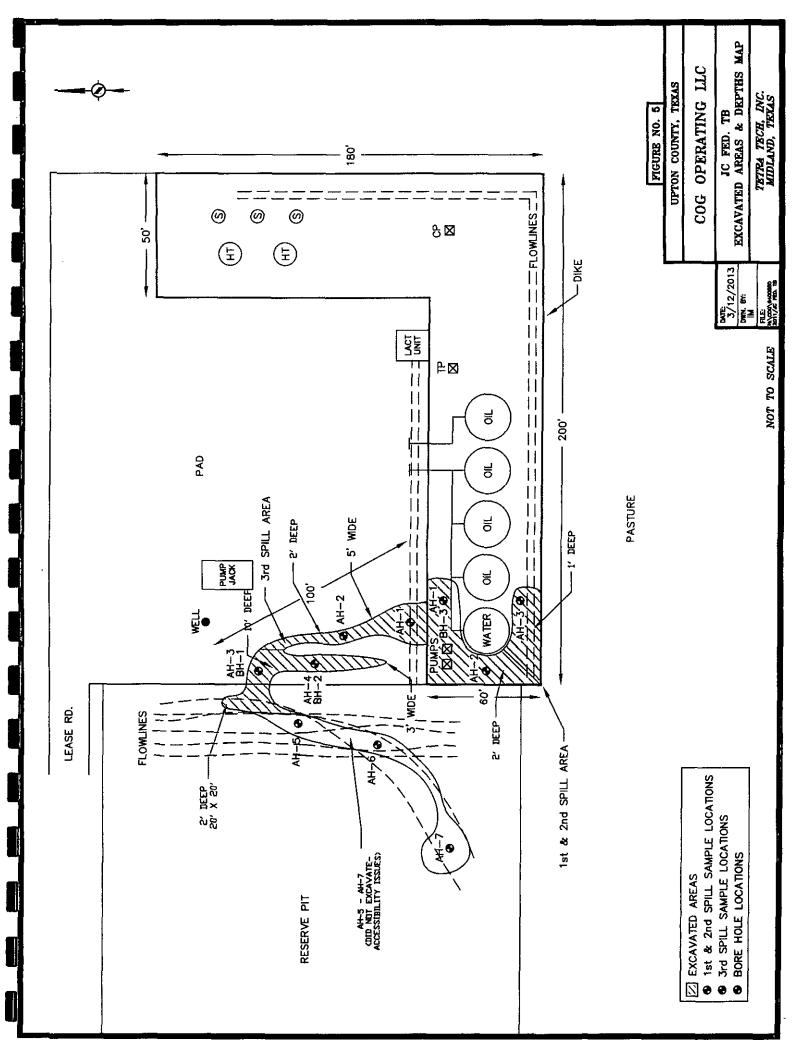


Table 1
COG Operating LLC.
JC Federal Tank Battery
Spill #1 and #2 (Inside Tank Battery)
LEA COUNTY, NEW MEXICO

(mg/kg) (mg/kg)			12,200	12,200												
(mg/kg)			<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<0:0200	<0.0200	<0.0200	<0.02003	<0.0200
٥			,   <del>V</del>	<i>&gt;</i> :	<i>::</i>	<i>∖</i> :	: <del>                                    </del>	<i></i>	<i></i>	<i></i>	<del></del>	× <del>                                    </del>	× <del>                                    </del>			
			· /													
DRO Total		150 Mg 15	<50.0	<.50.0	<50.0	\$	<.	<.	<.	250.0	.<50.0	\$ 20.0 -		250.0	\$ 550.0	250.0
Removed GRO					y 1	9.3	7 grs		\$\frac{1}{2}\frac{1}{2	\$ 1				( g'   g)   g)   g)   g   g   g   g   g   g		
In-Situ	i	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	=	= = = = = = = = = = = = = = = = = = = =		=	=									
Depth (ft) (BEB)		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		a (	2.0		1. ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (		Control of the Contro	in the second se	Section 1	The state of the s				
Date Dept		Battery					.   -   -   -		. <del></del>				· -			
₽		Inside Tank Battery	Inside Tank E AH-1 6/	AH-1 6/	Inside Tank E	Inside Tank E	AH-1 6/	Inside Tank E AH-1 6/	AH-1 6/	AH-1 6/	AH-1 6/	AH-1 6/	AH-1 6/AH-1 10	AH-1 6/ AH-1 10 BH-3 10	AH-1 6/ AH-1 6/ BH-3 10	AH-1 6/AH-1 10

Spill #1 and #2 (Inside Tank Battery) LEA COUNTY, NEW MEXICO JC Federal Tank Battery COG Operating LLC. Table 1

Chloride	(mg/kg)	10,400	1,500	1,100	2,020	970	851	252	<200	<200	<200	~232	<200	<200	<200	<200	<200	<200	<200	<200	<200
Xylene	(mg/kg)	0.286	······································		•			,	,		,	. 33 6	<0.0200	•	•	•	•	,	•	•	-
Ethlybenzene	(mg/kg)	0.12	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	3 3	١	,		•	,	•	,	24.5	<0.0200	r	1	1	•	•	•		
Toluene		0.0944	in i	P Sage	,	<u>'</u>	-	-	-		-	33.00	<0.0200	1	,	,	•	,		•	,
Benzene	(mg/kg)	<0.0200		1 1500 32	,		•		1	-	1	2.29	<0.0200	•		,	•	•	,	-	,
g)	Total	159		1 5	•		•		,	r	ſ	1,623	-	•	•	ſ	,	•	,	-	,
TPH (mg/kg)	DRO	6.79	10 m		•	ı	ı		1	٠	,	323	-	•	•		-	ı	1	-	•
Ţ	GRO	6.06	***************************************	ver	_	1	7	1	-	•	,	1,300	,	1	-	'	•	•		-	,
Soil Status	Removed	×	×	, X								×									
Soil	In-Situ		<del> </del>		×	×	×	×	×	×	×	J.	×	×	×	×	×	×	×	×	×
Depth	(BEB)	6.	14 A									,									
Sample	Depth (ft)	0-1,	1-1.5	. 2-2.5	3-3.5'	4-4.5	5-5.5	6-6.5	7-7.5'	8-8.5	9-9.5	0-1,	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5	6-6.5	7-7.5	8-8.5′	9-9.5
Sample	Date	6/15/2010										6/15/2010									
Sample	. <u>G</u>	AH-2										AH-3					;				

Below Excavation Bottom BEB

Not Analyzed I [

Excavation depth

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

																_			
Chloride	(mg/kg)	· · · · · · · · · · · · · · · · · · ·	4,710	1,390	<200	<200	<200	<200	<200	<200	<200	<200	1,570	1,240	883	<200	247	<200	<200
Xylene	(mg/kg)	記事人の強いといろう	<0.0200		-		,		1		·	-	0.216		,				
Ethlybenzene	(mg/kg)	一日 大きない のか	<0.0200	, b		,	,	,	,	,	j	,	<0.0200	2.00 m	,	,	,		,
Toluene	(mg/kg)	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	<0.0200	d n	•	•	,	3	•	,		-	<0.0200		ł		•	,	
Benzene	(mg/kg)	19 (18	<0.0200	7 *		•	ı		1	,		1	<0.0200		•	•	•	,	
	Total		<50.00	.,		,	_	1	,	,	,	,	164	_	1	,	•	,	
TPH (mg/kg)	DRO	47 4 4×	<50.00		ļ	,	•	•	•	,	•		141		•		,	,	
TP	GRO		<2.00	e h		•	1	•	-	,	•	ı	23		,				1
Status	Removed	4 6 4 8 6	×	×									×	X					
Soil	In-Situ	* C *		. IV	×	×	×	×	×	×	×	×		de ne	×	×	×	×	×
	(BEB	dan.	14 7: F									_		13					
Sample	Depth (π)	,	0-1	1-1,5	2-2.5'	3-3.5	4-4.5	5-5.5	6-6.5'	7-7.5	8-8.5'	9-9.5	1-0	1-1:5'	2-2.5	3-3.5'	4-4.5	5-5.5	6-6.5
Sample	Date	Tank Battery Pad Area	6/15/2010										6/15/2010						
Sample	2	Tank Batt	AH-1										AH-2						

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soil	Status		TPH	TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Chloride
.⊡	Date	_	(BEB)	In-Situ	Removed	d GRO	02	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	6/15/2010	0-1			×	989		192	872	0.54	4.17	. 6.97	7.01.	š 11,100 🕯
		1-1.5	, t <sub>n</sub>		×			11 11 P. 18		4	. d.		學會	, 3,410
	{	.2-2.5	ж	r Jens	×		. ·	: ا				7 A	10 M	* 2 421**)
		3-3.5			×		*	1		, e		1		1,130
		.4-4.5	,		×	. 6		501	, , , , , , , , , , , , , , , , , , ,		· 61	1 m	**	1,090
		52-2	Y		×,			or, b	~1,	, J.	* * * * * * * * * * * * * * * * * * *	and the second second	* * * * * * * * * * * * * * * * * * *	1,840
		6-6.5'	,	3 .	×	•		-10				100 A	*	1,980
		. 7-7.5		, se	×	1 2		w <sub>i</sub> ,	**	3		The second second		, 1,900,
		8-8.5			×	•		7. IA						ु. 1,420
		8.5-9'		Ŭ	×			في:			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	- C	· · · · · · · · · · · · · · · · · · ·	*: 1,050 °
BH-1	10/19/2010	0-1		1	×	- "		3 1	I v		, ig	, , , , , , , , , , , , , , , , , , ,	1. P.	11,600
		3,		, a	×			21 .T	*	•			, to	1,130
		2, 2	, , ,	4e∰	Ý	k.i	-	, , 2 , 3	3, = 4,		9			1,390
		٤ /		,	×		<u> </u>	7 L	1	*1	, 4 6 1	,		<200
		10'%		1 m 3/2 2	×		F. 3.	8		¥.	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	The second second	4	626
		15'		×				,		1	,	-	,	<200
		20,		×				,	1	ı		•	1	343

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Soil Status
v . <2.00 <30.00
· ×
×
. X
, X
X . (*)
×
X
×
- ×
X
×
· X
X
**

Table 2
COG Operating LLC.
JC Federal TB
Spill #3 (Tank Battery Pad)
LEA COUNTY, NEW MEXICO

Sample	Sample		Depth	Soil	Status		TPH (mg/kg)	6)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
_	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-5*	6/15/2010	0-1		×		231	5,820	6,051	<0.200	0.496	0.335	0.88	3,380
		1-1.5		×		96.2	1,990	2,086	•	•	·	,	984
		2-2.5		×		1	•	•	i li	,	•		791
		3-3.5		×		-	-	,	-	•	1	·	939
		4-4.5'		×		-	1	-	-	ı	1	•	1,100
*9-HA	6/15/2010	0-1		×		<2.00	<50.00	<50.00	<0.0200	<0.0200	<0.0200	<0.0200	7,500
		1-1.5'		×		-	ı	-			•	,	<200
		2-2.5'		×		•	•	-			ı	9	208
		3-3.5		×		•	ŀ	-	1	•	1	•	548
		4-4.5		×		•	•	-	•	ı	ı	,	632
		5-5.5		×		•	-	,		•	ı	•	781
		6-6.5		×		-	-	-	•	•	ŀ		791
		7-7.5'		×		-	1	-	-	-	-	•	1,050
AH-7*	6/15/2010	0-1		×		42.4	64	106	<0.0200	0.146	0.165	0.47	7,520
		1-1.5		×		ı	ı	•				-	<200
		2-2.5'		×		-	-	-	-		1	,	<200
		3-3.5		×		-	-	•	•	,	ı	,	282
		4-4.5		×		•	-	•	•	,	•	1	949
		5-5.5		×		•		•	t	•	•	1	1,810
		5.5-6′		×		•	١	,	,	•	•		2,100

Below Excavation Bottom Not Analyzed Excavation depth \* ( ) HEB

Installed near or on closed reserve pit

# Water Well Data Average Depth to Groundwater (ft) COG - JC Federal #2 Tank Battery, Lea County, New Mexico

	16 9	South	3	1 East			16	South	3	2 East			_16 S	<u>outh</u>	3:	3 East	
3	5	4	3	2	1	8	5	4	3	2	1	6	5 180	4	3 130	12	1
				1					65	265	265			150	Ш.	148	142
	8	9	10	71	12	7	8	9	10	11	12	7	8	9	10	11	12
		l		1_	288	l l	l		1	}	215	1	200	<u> </u>	182	<u> </u>	142
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
	-	1	1	ļ	113			221	ļ		215	- Ł	182	180	175	143	110
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
		i		1 .		220	1	210	1	210		i	<u> </u>	1		120	1
10	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
•	ł	1	ļ	[		1	İ	j i	]	243		191	ł	190	130	143	120
31	32	33	34	35	38	31	32	33	34	35	36	31	32	33	34	35	36
290	1		1			1	ı	1	i i		260	190	168	l	160	1	}
									***************************************		الجيسة الترام		•				
	17 9	South	3	l East		1	17	South	3	2 East			17 S	outh	3:	3 East	
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	8	9	10	11	12	7	8	9	10	11 70	12	7 187	8	9	10	11	12
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9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
	1	1	1	ſ	1	1		ſ	1	1		1	190		T .	115	1
10	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26	25
-			<u> </u>			180'		1	<u> </u>	[		1		_		[	1
<u> 1</u>	32	33	34	35	36	31	32	33	34	35	38	31	32	33	34	35	36
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			12.71			<u> </u>						<u> </u>	<del></del>			100	
	18 5	South	3	1 East			18 9	South	3	2 East			18 S	outh	33	B East	
	5	4	3	2	1	6	5	4 65	3	2	1	6	5	4	3	2	1
	8	9	10	117	12	7 460	8	9	10	11	12	7-	8 100	9	10	111	12 143
	ľ		1		400	82	_		`	1		ľ			62	Ι	140
β	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14	13
	1"	1.		317			''	84	'-	1''	"	1,7	85	l'*	1	1	60
<del>-</del>	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23	24
•		<b> </b> *'		~~		1.5	I	'		25	<sup>67</sup>	4	-	<b>-</b> '		ادّ	1
<del></del> -	29	28	27	26	25	30	164	28	429 27	26	25	>140 30	29	28	27	26	195 25
•	128	120	<b>1</b> -'	100	23	130	28	احم	<b> </b>	20	20		  -	20	اءً'	ادم	۳ ا
		33	34	35	36	31	32	33	34	36	36	35 31	32	33	34	35	36
	32											E:3.1	132		1.343	4.343	130

- 88 New Mexico State Engineers Well Reports
- 105 USGS Well Reports
- 90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6) Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34 NMOCD Groundwater Data
- 180 Recently installed temporary monitor well.

Report Date: July 2, 2010 Work Order: 10061721 Page Number: 1 of 5

## **Summary Report**

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705 Report Date: July 2, 2010

Work Order: 10061721

Project Location: Lea County, NM

Project Name: COG/JC Federal TB Spill #1 Well #2

Project Number: 114-6400550

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
234897	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234898	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234899	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234900	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234901	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234902	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234903	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234904	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234905	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234906	AH-2 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234907	AH-2 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234908	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234910	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234911	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234912	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234913	AH-2 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234914	AH-2 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234915	AH-2 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234916	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234917	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234918	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234919	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234920	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234921	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234922	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234923	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234924	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234925	AH-3 9-9.5'	soil	2010-06-15	00:00	2010-06-17
235017	AH-1 7.5-8'	soil	2010-06-15	00:00	2010-06-17

				<del></del>		
	<u> </u>		BTEX		TPH DRO - NEW	TPH GRO
1	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
234897 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
234905 - AH-2 0-1'	< 0.0200	0.0944	0.120	0.286	67.9	90.9
234916 - AH-3 0-1'	2.29	33.0	24.5	33.6	323	1300
234917 - AH-3 1-1.5'	<0.0200	<0.0200	<0.0200	<0.0200		
Sample: 234897 - AH-	-1 0-1'					
Param	Flag		Result		Units	RL
Chloride			12200		mg/Kg	4.00
Sample: 234898 - AH-	·1 1-1.5'					
Param	Flag		Result		Units	RL
Chloride			1590		mg/Kg	4.00
Sample: 234899 - AH- Param	Flag		Result		Units	RL
Chloride	Trag		1230		mg/Kg	4.00
Sample: 234900 - AH-			<b>5</b>		**	<b></b>
Param	Flag	···-	Result		Units	RL
Chloride			1280		mg/Kg	4.00
Sample: 234901 - AH-	1 4-4.5'					
Param	Flag		Result		Units	RL
Chloride	<del> </del>		1850		mg/Kg	4.00
Sample: 234902 - AH-	1 5-5.5'					
Param	Flag		Result		Units	RL
Chloride			614		mg/Kg	4.00

Work Order: 10061721

Page Number: 2 of 5

Sample: 234903 - AH-1 6-6.5'

Report Date: July 2, 2010

Report Date: July	2, 2010	Work Order: 10061721	Page	Number: 3 of 5
Param	Flag	Result	Units	RL
Chloride		297	mg/Kg	4.00
Sample: 234904	- AH-1 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		901	mg/Kg	4.00
Sample: 234905	- AH-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		10400	mg/Kg	4.00
Sample: 234906	- AH-2 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		1500	mg/Kg	4.00
Sample: 234907	- AH-2 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00
Sample: 234908	- AH-2 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		2020	mg/Kg	4.00
Sample: 234910	- AH-2 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		970	mg/Kg	4.00
Sample: 234911 -	- AH-2 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		851	mg/Kg	4.00

Report Date: July 2, 2010	Work Order: 10061721	P	age Number: 4 of 5
Sample: 234912 - AH-2 6-6.5'			
Param Flag	Result	Units	RL
Chloride	252	mg/Kg	4.00
Sample: 234913 - AH-2 7-7.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234914 - AH-2 8-8.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234915 - AH-2 9-9.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234916 - AH-3 0-1'			
Param Flag	Result	Units	RL
Chloride	232	mg/Kg	4.00
Sample: 234917 - AH-3 1-1.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234918 - AH-3 2-2.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00
Sample: 234919 - AH-3 3-3.5'			
Param Flag	Result	Units	RL
Chloride	<200	mg/Kg	4.00

Report Date: July	2, 2010	Work Order: 10061721	Page	Number: 5 of 5
Sample: 234920	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234921	- AH-3 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234922	- AH-3 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Chloride Chloride	Flag	Result   <200	Units mg/Kg	
Param Chloride	Flag	Result <200	Units mg/Kg	RL 4.00
Sample: 234924	- AH-3 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234925	- AH-3 9-9.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 235017	- AH-1 7.5-8'			
Param	Flag	Result	Units	RL
Chloride		459	mg/Kg	4.00

Report Date: July 2, 2010 Work Order: 10061722 Page Number: 1 of 9

## **Summary Report**

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

Report Date: July 2, 2010

Work Order: 10061722

Project Location: Lea County, NM

Project Name: COG/JC Federal TB Spill #2 4 in. Line

Project Number: 114-6400550

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
234926	AH-1 0-1'	soil	2010-06-15	00:00	2010-06-17
234927	AH-1 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234928	AH-1 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234929	AH-1 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234930	AH-1 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234931	AH-1 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234932	AH-1 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234933	AH-1 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234934	AH-1 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234935	AH-1 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234936	AH-2 0-1'	soil	2010-06-15	00:00	2010-06-17
234937	AH-2 1-1.51	soil	2010-06-15	00:00	2010-06-17
234938	AH-2 2-2.51	soil	2010-06-15	00:00	2010-06-17
234939	AH-2 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234940	AH-2 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234941	AH-2 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234942	AH-2 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234943	AH-3 0-1'	soil	2010-06-15	00:00	2010-06-17
234944	AH-3 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234945	AH-3 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234946	AH-3 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234947	AH-3 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234948	AH-3 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234949	AH-3 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234950	AH-3 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234951	AH-3 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234952	AH-3 8.5-9'	soil	2010-06-15	00:00	2010-06-17
234953	AH-4 0-1'	soil	2010-06-15	00:00	2010-06-17
234954	AH-4 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234955	AH-4 2-2.5'	soil	2010-06-15	00:00	2010-06-17

Report Date: July 2, 2010 Work Order: 10061722 Page Number: 2 of 9

			Date	Time	Date
Sample_	Description	Matrix	Taken	Taken	Received
234956	AH-4 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234957	AH-4 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234958	AH-4 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234959	AH-4 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234960	AH-4 7-7.5°	soil	2010-06-15	00:00	2010-06-17
234961	AH-4 8-8.5'	soil	2010-06-15	00:00	2010-06-17
234962	AH-4 9-9.5'	soil	2010-06-15	00:00	2010-06-17
234963	AH-5 0-1'	soil	2010-06-15	00:00	2010-06-17
234964	AH-5 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234965	AH-5 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234966	AH-5 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234967	AH-5 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234968	AH-6 0-1'	soil	2010-06-15	00:00	2010-06-17
234969	AH-6 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234970	AH-6 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234971	AH-6 3-3.5'	soil	2010-06-15	00:00	2010-06-17
234972	AH-6 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234973	AH-6 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234974	AH-6 6-6.5'	soil	2010-06-15	00:00	2010-06-17
234975	AH-6 7-7.5'	soil	2010-06-15	00:00	2010-06-17
234976	AH-7 0-1'	soil	2010-06-15	00:00	2010-06-17
234977	AH-7 1-1.5'	soil	2010-06-15	00:00	2010-06-17
234978	AH-7 2-2.5'	soil	2010-06-15	00:00	2010-06-17
234979	AH-7 3-3.5°	soil	2010-06-15	00:00	2010-06-17
234980	AH-7 4-4.5'	soil	2010-06-15	00:00	2010-06-17
234981	AH-7 5-5.5'	soil	2010-06-15	00:00	2010-06-17
234982	AH-7 5.5-6'	soil	2010-06-15	00:00	2010-06-17

		]	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)
234926 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
234936 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	0.216	141	23.0
234943 - AH-3 0-1'	0.540	4.17	6.97	10.7	192	680
234953 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	< 2.00
234963 - AH-5 0-1'	< 0.200	0.496	0.335	0.880	5820	231
234964 - AH-5 1-1.5'				ĺ	1990	96.2
234968 - AH-6 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	< 2.00
234976 - AH-7 0-1'	< 0.0200	0.146	0.165	0.470	64.0	42.4

Sample: 234926 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		4710	mg/Kg	4.00

Sample: 234927 - AH-1 1-1.5'

Report Date: July 2, 2010		Work Order: 10061722	Page	Number: 3 of 9
Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00
Sample: 234928	- AH-1 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234929 -	- AH-1 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234930 -	- AH-1 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234931	- AH-1 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234932 -	· AH-1 6-6.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234933 -	AH-1 7-7.5'			
Param	Flag	Result	Units	$\mathbf{R}\mathbf{L}$
Chloride		<200	mg/Kg	4.00
Sample: 234934 -	AH-1 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00

Report Date: July 2, 2010	Work Order: 10061722	P	Page Number: 4 of 9	
Sample: 234935 - AH-1 9-9.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	_4.00	
Sample: 234936 - AH-2 0-1'				
Param Flag	Result	Units	RL	
Chloride	1570	mg/Kg	4.00	
Sample: 234937 - AH-2 1-1.5'				
Param Flag	Result	Units	RL	
Chloride	1240	mg/Kg	4.00	
Sample: 234938 - AH-2 2-2.5'				
Param Flag	Result	Units	RL	
Chloride	883	mg/Kg	4.00	
Sample: 234939 - AH-2 3-3.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	4.00	
Sample: 234940 - AH-2 4-4.5'				
Param Flag	Result	Units	RL	
Chloride	247	mg/Kg	4.00	
Sample: 234941 - AH-2 5-5.5'				
Param Flag	Result	Units	RL	
Chloride	<200	mg/Kg	4.00	
Sample: 234942 - AH-2 6-6.5'				
Param Flag		Units	RL	
Chloride	<200	mg/Kg	4.00	

Report Date: July 2, 2010		Work Order: 10061722	Page Number: 5 o	
Sample: 234943	- AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		11100	mg/Kg	4.00
Sample: 234944	- AH-3 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		3410	mg/Kg	4.00
Sample: 234945	- AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		421	mg/Kg	4.00
Sample: 234946	- <b>AH-3 3-3.5'</b> Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00
Sample: 234947	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		1090	mg/Kg	4.00
Sample: 234948	- AH-3 5-5.5'			
Sample: 234948		Result	Units	RL
_	- <b>AH-3 5-5.5'</b> Flag	Result 1840	Units mg/Kg	RL 4.00
Param	Flag			
Param Chloride Sample: 234949	Flag - AH-3 6-6.5'	1840		4.00
Param Chloride	Flag		mg/Kg	
Param Chloride Sample: 234949 Param	Flag - AH-3 6-6.5' Flag	1840 Result	mg/Kg Units	4.00 RL
Param Chloride  Sample: 234949  Param Chloride	Flag - AH-3 6-6.5' Flag	1840 Result	mg/Kg Units	4.00 RL

Report Date: July 2, 2010		Work Order: 10061722	Page	RL 4 00	
Sample: 234951 - AH-3	8-8.5'				
Param	Flag	Result	Units	RL	
Chloride		1420	mg/Kg	4.00	
Sample: 234952 - AH-3	8.5-9'				
Param	Flag	Result	Units	RL	
Chloride		1050	mg/Kg	4.00	
Sample: 234953 - AH-4	0-1'				
Param	Flag	Result	Units	RL	
Chloride		4890	mg/Kg	4.00	
Sample: 234954 - AH-4	1-1.5'				
Param	Flag	Result	Units	RL	
Chloride		1480	mg/Kg	4.00	
Sample: 234955 - AH-4	2-2.5'				
Param	Flag	Result	Units	RL	
Chloride		1800	mg/Kg	4.00	
Sample: 234956 - AH-4	3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		5820	mg/Kg	4.00	
Sample: 234957 - AH-4	4-4.5'				
Param	Flag	Result	Units	RL	
Chloride		2210	mg/Kg	4.00	
Sample: 234958 - AH-4	5-5.5¹				
Param	Flag	Result	Units	RL	
Chloride		2220	mg/Kg	4.00	

Report Date: July 2, 2010		Work Order: 10061722	Page	Number: 7 of 9
Sample: 234959	- AH-4 6-6.5°			
Param	Flag	Result	Units	RL
Chloride		2760	mg/Kg	4.00
Sample: 234960	- AH-4 7-7.5'			
Param	Flag	Result	Units	RL
Chloride		2270	mg/Kg	4.00
Sample: 234961	- AH-4 8-8,5'			
Param	Flag	Result	Units	RL
Chloride		1970	mg/Kg	4.00
Sample: 234962 Param	- <b>AH-4 9-9.5'</b> Flag	Result	Units	RL
Chloride		4010	mg/Kg	4.00
Sample: 234963 Param Chloride	- AH-5 0-1' Flag	Result 3380	Units mg/Kg	RL 4.00
Sample: 234964	- AH-5 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		984	mg/Kg	4.00
Sample: 234965	- AH-5 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		791	mg/Kg	4.00
Sample: 234966	- AH-5 3-3.5'			
Param	Flag	Result	Units	RL

Report Date: July 2, 2010		Work Order: 10061722	Pag	e Number: 8 of 9
Sample: 234967 -	AH-5 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		1100	mg/Kg	4.00
Sample: 234968 -	AH-6 0-1'			
Param	Flag	Result	Units	RL
Chloride		7500	mg/Kg	4.00
Sample: 234969 -	AH-6 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 234970	AH-6 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		208	mg/Kg_	4.00
Sample: 234971	AH-6 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		548	mg/Kg	4.00
Sample: 234972	AH-6 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		632	mg/Kg	4.00
Sample: 234973 - <i>i</i>	AH-6 5-5.5'			
Param	Flag	Result	Units	RL
Chloride		781	mg/Kg	4.00
Sample: 234974 - 4	AH-6 6-6.5'			
Param	Flag	Result	Units	RL
Chloride	<u> </u>	791	mg/Kg	4.00

Report Date: July 2, 2010		Work Order: 10061722	Page	Page Number: 9 of 9	
Sample: 234975 -	AH-6 7-7.5'	·			
Param	Flag	Result	Units	RL	
Chloride		1050	mg/Kg	4.00	
Sample: 234976 -	AH-7 0-1'				
Param	Flag	Result	Units	RL	
Chloride		7520	mg/Kg	4.00	
Sample: 234977 -	AH-7 1-1.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 234978 -	AH-7 2-2.5'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 234979 -	AH-7 3-3.5'				
Param	Flag	Result	Units	RL	
Chloride		282	mg/Kg	4.00	
Sample: 234980 -	AH-7 4-4.5°				
Param	Flag	Result	Units	RL	
Chloride		949	mg/Kg	4.00	
Sample: 234981 -	AH-7 5-5.5'				
Param	Flag	Result	Units	RL	
Chloride		1810	mg/Kg	4.00	
Sample: 234982 -	AH-7 5.5-6'				
Param	Flag	Result	Units	RL	
Chloride		2100	mg/Kg	4.00	

#### Page Number: 1 of 3

### **Summary Report**

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Report Date: October 25, 2010

Work Order: 10102018 

Project Location: Lea County, NM

Project Name:

COG/JC Federal TB Spill #1 Well #2

Project Number: 114-6400550

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
247985	BH-1 0-1'	soil	2010-10-19	00:00	2010-10-20
247986	BH-1 3'	soil	2010-10-19	00:00	2010-10-20
247987	BH-1 5'	soil	2010-10-19	00:00	2010-10-20
247988	BH-1 7'	soil	2010-10-19	00:00	2010-10-20
247989	BH-1 10'	soil	2010-10-19	00:00	2010-10-20
247990	BH-1 15'	soil	2010-10-19	00:00	2010-10-20
247991	BH-1 20'	soil	2010-10-19	00:00	2010-10-20
247992	BH-2 0-1'	soil	2010-10-19	00:00	2010-10-20
247993	BH-2 3'	soil	2010-10-19	00:00	2010-10-20
247994	BH-2 5'	soil	2010-10-19	00:00	2010-10-20
247995	BH-2 7'	soil	2010-10-19	00:00	2010-10-20
247996	BH-2 10'	soil	2010-10-19	00:00	2010-10-20
247997	BH-3 0-1'	soil	2010-10-19	00:00	2010-10-20
247998	BH-3 3'	soil	2010-10-19	00:00	2010-10-20
247999	BH-3 5'	soil	2010-10-19	00:00	2010-10-20
248000	BH-3 7'	soil	2010-10-19	00:00	2010-10-20
248001	BH-3 10'	soil	2010-10-19	00:00	2010-10-20

Sample: 247985 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00

Sample: 247986 - BH-1 3'

Report Date: October 25, 2010		Work Order: 10102018	Work Order: 10102018 Page	
Param	Flag	Result	Units	RL
Chloride		1130	mg/Kg	4.00
Sample: 247987 - 1	BH-1 5'			
Param	Flag	Result	Units	RL
Chloride		1390	mg/Kg	4.00
Sample: 247988 - l	BH-1 7'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 247989 - l				
Param Chloride	Flag	Result 626	Units mg/Kg	RL 4.00
Sample: 247990 - I	3H-1 15'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 247991 - I	3H-1 20'			
Param	Flag	Result	Units	RL
Chloride		343	mg/Kg	4.00
Sample: 247992 - I	3H-2 0-1'			
Param	Flag	Result	Units	RL
Chloride		8590	mg/Kg	4.00
Sample: 247993 - I	3H-2 3'			
Param	Flag	Result	Units	RL
Chloride	0	6260	mg/Kg	4.00

Report Date: Octob	ber 25, 2010	Work Order: 10102018	Page Number: 3	
Sample: 247994 -	- BH-2 5'			
Param	Flag	Result	Units	RL
Chloride		489	mg/Kg	4.00
Sample: 247995 -	- BH-2 7'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 247996 -	BH-2 10'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 247997 -	BH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride	<del>,</del>	300	mg/Kg	4.00
Sample: 247998 -	BH-3 3'			
Param	Flag	Result	Units	RL
Chloride		320	mg/Kg	4.00
Sample: 247999 -	BH-3 5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 248000 -	BH-3 7'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 248001 -	BH-3 10'			
Param	Flag	Result	Units	RL
Chloride	<del></del>	<200	mg/Kg	4.00