HOBBS OCD

District I
1625 N. French Dr., Hobbs, NM 88240
District II
1301 W. Grand Avenue, Artesia, NM 2270 2 2 2012

District III
1000 Rio Brazos Road, Aztec, NM 87410

Attach Additional Sheets If Necessary

District IV
1220 S. St. Francis Dr., Santa Fe, NM 8750.

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

Final Report

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

Initial Report

Release Notification and Corrective Action

OPERATOR

Name of Co	mpany C	OG Operat	ting LLC		Contact Pat Ellis					
				nd, Texas 79701			lo. (432) 230-0	077		
Facility Nan	ne Prohib	ition Feder	al Unit#	2 SWD	I	Facility Typ	e SWD			
Surface Ow	ner: Feder	al		Mineral O	wner				Lease N	No. (API#) 30-025-31716
				LOCA	TION	OF REI	LEASE			
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	East/\	West Line	County
K	11	22S	32E	1980	S	South	2080	١	West	Lea
	J		L	atitude N 32.40)418°	Longitud	e W 103.64706	6 °		
				NAT	URE	OF RELI				
Type of Relea							Release 20 bbls			Recovered 10 bbls
Source of Rel	lease: Tripl	ex Pump				l .	our of Occurrence 7/17/2010	е	Date and 07/17/201	Hour of Discovery 10 10:00a.m.
Was Immedia	ite Notice C		Yes 🛚	No 🛛 Not Re	quired	If YES, To	Whom?			
By Whom?						Date and H	our			
Was a Watero	ourse Reac		Yes 🛭	No			lume Impacting the	he Wate	ercourse.	
	_	L	res 🔼	1 100		1V/A				
If a Watercou N/A	rse was Imp	pacted, Descri	ibe Fully.*							
Describe Cau	se of Proble	m and Remed	dial Action	Taken.*						
Union on trip	lex threads	wore out and	failed. Al	l of the fittings on	the trip	lex were repl	aced.			:
Describe Area	a Affected a	ınd Cleanup A	Action Tak	en.*				_		
Tetra Tech in then brought	spected and up to surfac	collected san e grade with o	nples to de clean back	efine spills extent. fill material. Tetra	Soil tha a Tech p	at exceeded Forepared clos	RAL was remove ure report and sub	ed and homitted	nauled away it to NMOO	y for proper disposal. Site was CD for review.
regulations al public health should their o	l operators and or the environment of the environment. In accumulation of the environment, and the environment of the environme	are required to onment. The ave failed to a dition, NMO	o report an acceptance	d/or file certain re e of a C-141 repor investigate and re	lease no rt by the mediate	otifications ar NMOCD made contamination	nd perform correct arked as "Final Re on that pose a thre	tive acti eport" d eat to gr	ons for rele oes not reli ound water	eases which may endanger eve the operator of liability surface water, human health compliance with any other
Signature: /		19	7			Approved by	Environment District Supervisor		ecialist	Sision .
Printed Name		ez (agent for (JUG)		-		into Chia	T		
Title: Project	Manager				<i>F</i>	Approval Dat	e: 10/25/12		Expiration 1	Date
E-mail Addre	ss: ike.tavai	ez@tetratech	.com			Conditions of	Approval:	,		Attached
Date 8/	25/1	n P	hone: (432	2) 682-4559			7			IRP-10-12-2856

SITE INFORMATION Report Type: Closure Report General Site Information: **Prohibition Federal Unit #2 SWD** Site: Company: **COG Operating LLC** Section, Township and Range **R32E Unit K** Sec 11 T22S Lease Number: API-30-025-31716 County: Lea County GPS: 32,40418° N 103.64706° W Surface Owner: Federal Mineral Owner: From the intersection of Hwy 248 and Hwy 8, travel north on Hwy 8 for 2.7 miles, turn left on Directions: Hwy 176 and travel for 21.7 miles, turn left onto lease road and travel 0.5 miles, turn right and travel 1.5 miles, turn left and travel 0.7 miles, turn left and travel 6 miles, turn right and travel 0.8 miles, turn left and travel 0.2 miles, turn right and travel 0.7 miles to site. Release Data: Date Released: 7/17/2010 Type Release: Produced Water Source of Contamination: Triplex Pump Fluid Released: 20 bbls Fluids Recovered: 10 bbls Official Communication: Name: Pat Ellis Ike Tavarez Company: COG Operating, LLC Tetra Tech Address: 550 W. Texas Ave. Ste. 1300 1910 N. Big Spring P.O. Box City: Midland, Texas Midland Texas, 79701 Phone number: (432)682-4559 (432) 686-3023 Fax: (432) 684-7137 Email: pellis@conchoresources.com ike.tavarez@tetratech.com Ranking Criteria Depth to Groundwater: Ranking Score Site Data <50 ft 20 50-99 ft 10 >100 ft. 0 WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. 20 Water Source >1,000 ft., Private >200 ft. 0 0 Surface Body of Water: Ranking Score Site Data <200 ft. 20 200 ft - 1,000 ft. 10 >1,000 ft. Total Ranking Score: HOBBS OCD 🛝 🔭 Acceptable Soil RRAL (mg/kg) 🧼 💸 OCT 2 2 2012 Benzene Total BTEX TPH 10 50 5,000 177. 2 TAR 2 3575

approved skell Solving, env. Specialists NMOCD-DIST, 10125/12

RECEIVED



August 29, 2012

HOBBS OCD

OCT 2 2 2012

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

RECEIVED

Re: Closure Report for the COG Operating LLC., Prohibition Federal #2 SWD, Unit K, Section 11, Township 22 South, Range 32 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Prohibition Federal Unit #2 SWD located in Unit K, Section 11, Township 22 South, Range 32 East, Lea County, New Mexico (Site). The spill site coordinates are N 32.40418°, W 103.64706°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 17, 2010, and released approximately twenty (20) barrels of produced water due to worn out threads on a triplex pump. To alleviate the problem, COG personnel replace all fittings on the pump. Ten (10) barrels of standing fluids were recovered. The spill traveled outside the firewall of the battery and migrated south affecting an area approximately 120' long, with a width of 2' to 35' wide. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 11. According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 325' below surface. The well report data is shown in Appendix B.

TETRA TECH

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On September 9, 2010, Tetra Tech personnel inspected and sampled the spill area. A total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. 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, all of the submitted samples were below the RRAL for TPH and BTEX. All of the auger holes (AH-1, AH-2, AH-3, AH-4 and AH-5) detected elevated chloride concentrations in the soils, with bottom hole samples of 17,300 mg/kg (2-2.5'), 1,110 mg/kg (1-1.5'), 670 mg/kg (0-1'), 12,000 mg/kg (1-1.5') and 3,790 mg/kg (0-1'), respectively. Deeper samples could not be collected due to a dense caliche formation. The chloride impact was not vertically defined.

To delineate the impact, an air rotary drilling rig was utilized to collect deeper samples. On March 25, 2011, Tetra Tech personnel supervised the installation of soil borings. A total of five (5) soil borings (SB-1 through SB-5) were installed to assess the soils. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The soil boring locations are shown on Figure 3.



Referring to Table 1, the deepest impact was detected in the area of SB-1 at the facility. The chloride concentrations significantly declined with depth at 50' below surface. The remaining auger holes showed a shallow impact to the soils and declined with depth. The areas of SB-2, SB-4 and SB-5 declined at an approximate depth of 5.0' to 7.0' and SB-3 showed a shallow impact to soil at 1.0' below surface.

Closure Activities

From April 30, 2012 to May 4, 2012, Tetra Tech personnel supervised the excavation of the site. Due to lines, structures and equipment, deeper excavation could not be achieved in the area of AH-1. However, approximately 1.0' of material was removed and deferred the remaining impacted soils in this area. The additional impacted areas were excavated to the appropriate depths as stated in the work plan. The excavation depths ranged from 1.0' to 5.0' below surface.

Once excavated, the NMOCD and BLM were contacted to discuss the remediation activities and both approved the backfilling of the site. The excavation areas and depths are highlighted in Table 1 and shown on Figure 4. A total of 286 cubic yards of soil were excavated and hauled to proper disposal. The excavated areas were backfilled with clean material to grade.

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

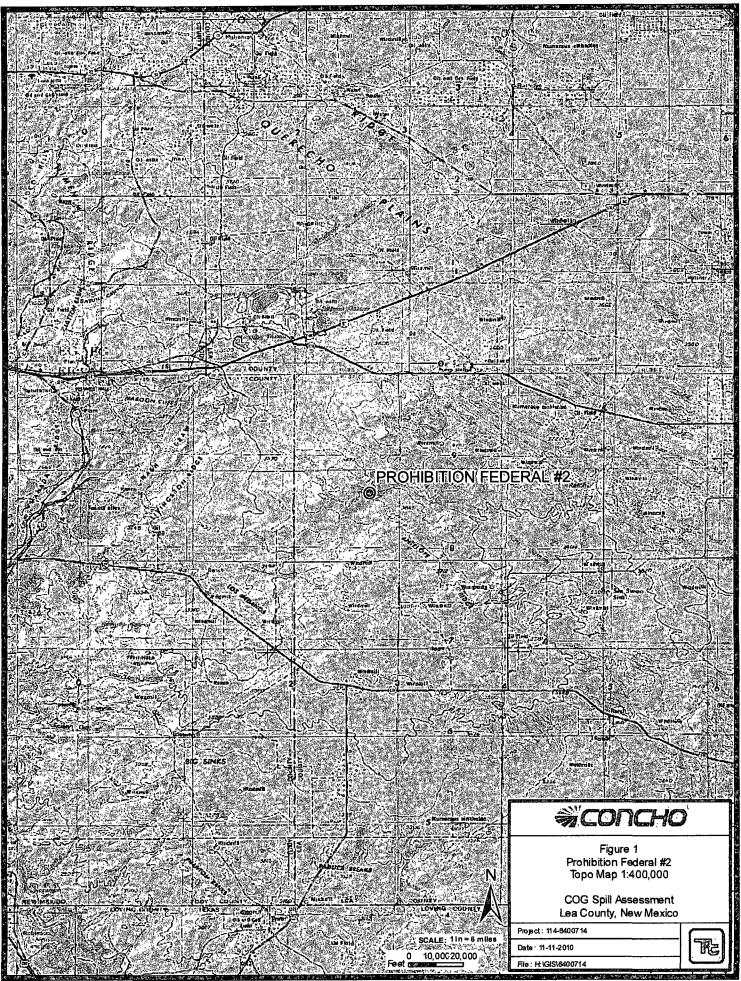
Respectfully submitted,

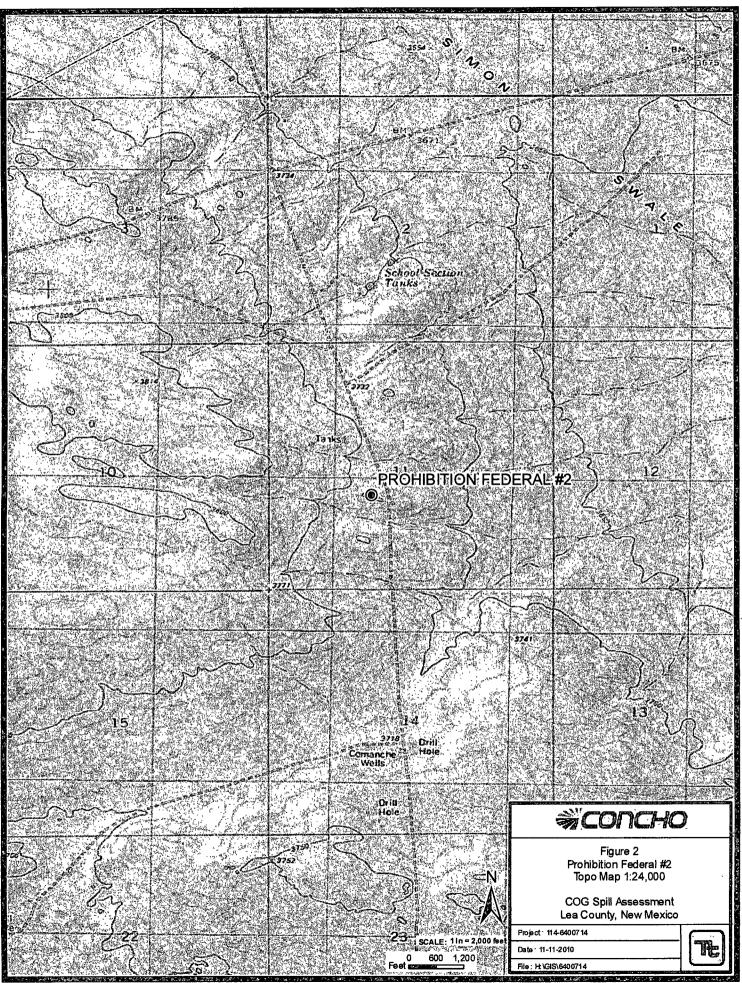
TETRA TECH

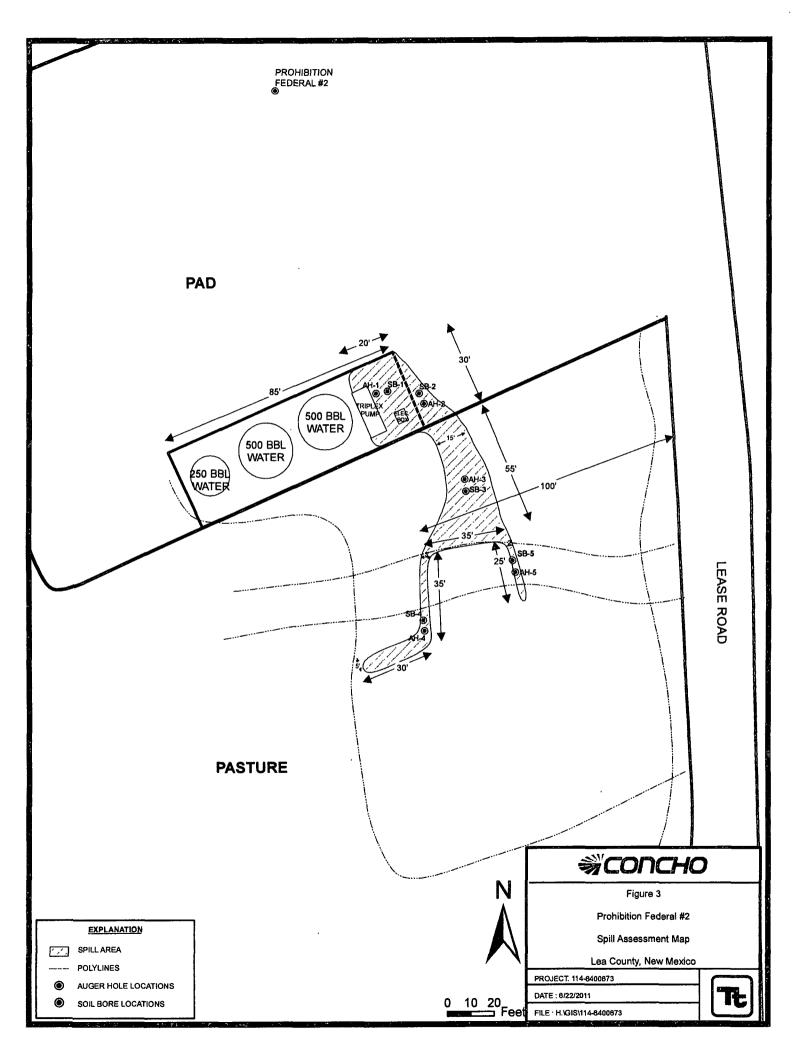
Ike Tavarez

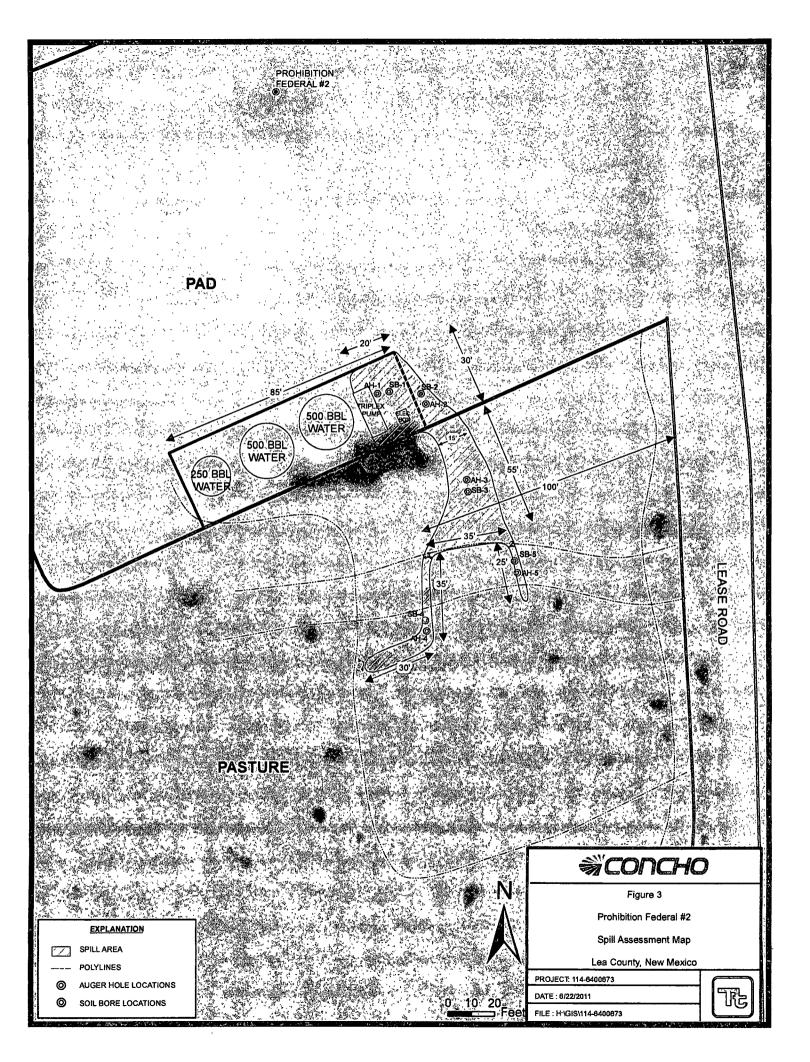
Project Manager

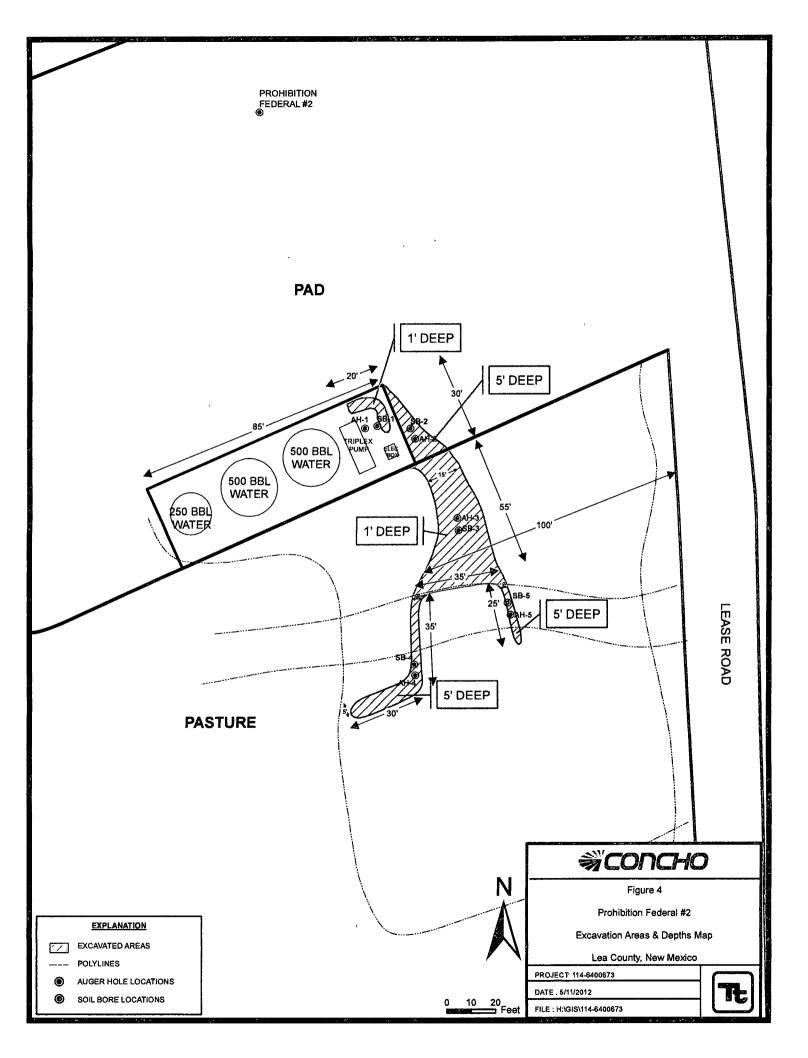
Figures











Tables

Table 1 COG Operating LLC. PROHIBITION FEDERAL #2 SWD

Lea County, New Mexico

Sample	Sample	Sample	Depth	Soi	Status	Т	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	9/9/2010	0-1			X	15.7	120	135.7	<0.0200	<0.0200	<0.0200	0.118	10,300
	11	1-1.5'		Х		-	-	-	_	-	-	-	5,640
	u	2-2.5'		Χ.		-	-	-	-	-	-	-	17,300
SB-1	3/24/2011	0-2'		Х		-	_	-	-	-	-	<u>-</u>	8,290
	u	3'		Х		-	-	<u>-</u>	-	-	_	-	12,200
	11	5'		Х		•	_	-	_	-	-		14,400
	п	7'		Х		-	-	-	_	-	_	-	11,700
	и	10'		Х		-	-	-	-	-	_	-	14,000
	11	15'		X		-	-	_	-	-	-	-	12,600
	u	20'		Х		-	-	-	-	-	-	-	6,530
	£ t	25'		Х		-	-	-	-	_	-	-	17,400
	u	30'		Х		-	-	-	-	-	-	-	8,540
	11	40'		Х		_	-	-	-	-	-	_	2,970
	u	50'		Х		-	_	-	-	-	-	-	<200
	и	60,		Х		-	-	-	-	-	-	-	251
	и	70'		Х		-	-	-	-	-	~	-	208

Table 1 COG Operating LLC. PROHIBITION FEDERAL #2 SWD Lea County, New Mexico

Sample	Sample	Sample	Depth	Soil	Status	TI	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ΙD	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-2	9/9/2010	0-1			X	2.47	<50.0	-<50.0	<0.0200	<0.0200	<0.0200	<0.0200	. 8.090
	II	1-1-5			X			The state of the s					1,110
SB-2	3/24/2011	0-1			X								3,140
	ц	3,			X								4,580
	п	5'			X				"是那么""是是一个"的"是一个""是一个""是一个""是一个""是一个""是一个""是一个""是一个"				2,970
	Ħ	7'		Х		-	-	-	-	+	•	-	208
	n	10'		Х		-	-	-	-	-	.•	-	<200
	11	15'		Х		_	-	-	-	-	<u>-</u> ·	-	<200
	Ш	20'		Х		-	-	-	-	-	-	-	<200
АН-3	9/9/2010	0-1		X		<2.00	142	142	<0.0200	<0.0200	. . 0.0200	<0.0200	670
SB-3	3/24/2011	0-1:	大线	X									2,350
	н	3,		Х		-	-	-	- .	-	_	-	612
	u .	5'		Х		-	-	-	_	-	-	-	612
	11	7'		Х		-	-	-	_	-	_	-	<200
	11	10'		Х		-	-	_	24	_	-	-	<200
	16	15'		Х		-	-	-	-	-	· -	-	<200
	11	20'		Х			-	-	-	-	-	-	<200

Table 1 COG Operating LLC. PROHIBITION FEDERAL #2 SWD

Lea County, New Mexico

Sample	Sample	Sample	Depth	Soil	Status	T	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-4	9/9/2010	0-1			×	<2.00	<50.0	<50.0 	<0:0200	<0.0200	- /<0:0200°	<0.0200	5,380
	11	1-1.5			X								12 000
SB-5	3/24/2011	0-1			X								3,150
	и	3			X								6,400
	10	5',5'			X								1,360
	u	7'		Х		-	-	į	-	-	-	-	<200
	и	10'		· X		_	-	-	-	_	-	-	<200
	и	15'	-	Х			-	-	_	<u>-</u>	-	-	<200
AH-5	9/9/2010	0-1			Y.X	<2.00	.<50.0 ³	< 5 0.0	<0.0200	<0:0200	<i>,</i> ≥ <0.0200	<0.0200	3,790
SB-4	3/24/2011	0-1			X								314
	II	3.			X								2,110
	EE .	5			X					HALL SO			4,520
	n	7'	-	Х		- .	-	-	-	-		-	<200
	п	10'		Х		-	-	-	-	-	-	_	<200
	и	15'		Х		-	-	-	-	-	-	-	379
	П	20'		Х		-	-	-	-	_	-	-	<200

BEB Below Excavation Bottom

(--) Not Analyzed

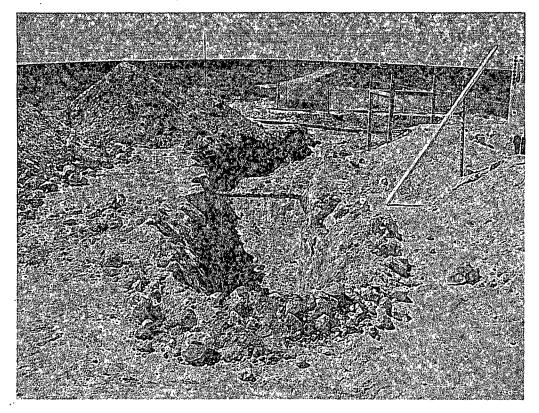
沙溪

Excavated material

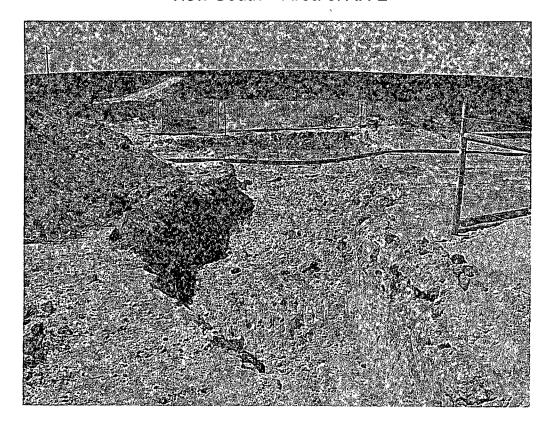
Photos

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico





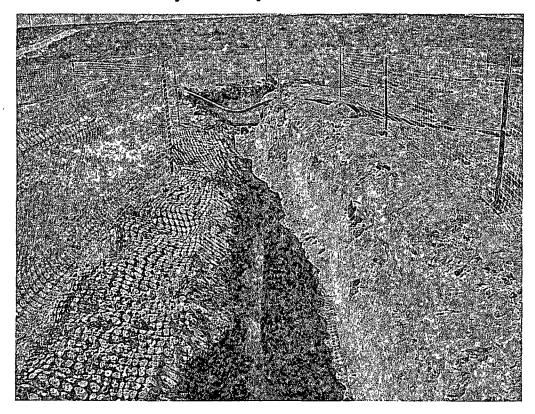
View South - Area of AH-2



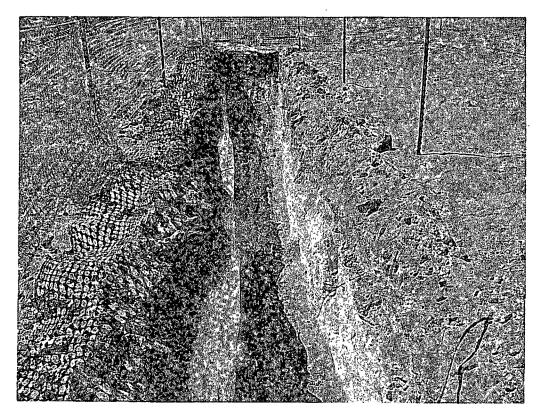
View South - Area of AH-3

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico





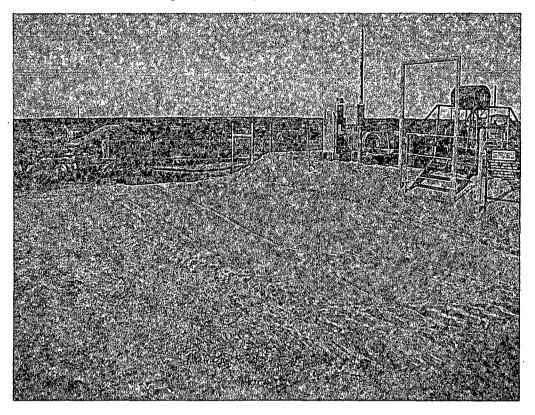
View West – Area of AH-4



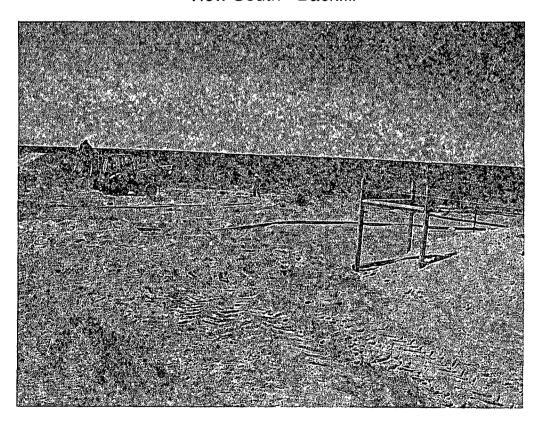
View South - Area of AH-5

COG Operating LLC Prohibition Federal Unit #2 SWD Eddy County, New Mexico





View South - Backfill



View South - Backfill

HOBBS OCD

District I

District II
1301 W. Grand Avenue, Artesia, NM 22 70 2 2 2012 Energy Minerals and Natural Resources
District III

District III 1000 Rio Brazos Road, Aztec, NM 87410

1220 S. St. Francis Dr., Santa Fe, NM 87 SECENED

E-mail Address: ike.tavarez@tetratech.com

Attach Additional Sheets If Necessary

Phone: (432) 682-4559

State of New Mexico

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

Attached

IRP-10-12-2856

	W4			54	III CC	3, 1 1212 3 7 5			The state of the s			
			Rele	ease Notific	atio	n and Co	rrective A	ction	1			
						OPERAT	ΓOR		☐ Initia	al Report	\boxtimes	Final Report
Name of Co	ompany (COG Operat	ting LLC	Y		Contact Pat	Ellis					
				nd, Texas 7970	1		lo. (432) 230-0	077				
		oition Feder				Facility Typ						
Surface Ow	ner: Feder	al		Mineral C)wner				Lease N	No. (API#)	30-02	5-31716
				LOCA	TIO	N OF REI	LEASE					
Unit Letter	Section	Township	Range	Feet from the	North	/South Line	Feet from the	East/\	West Line	County		
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If a Watercon	ırse was Im	pacted, Descr	ibe Fully.	ķ	,							
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Describe Are	a Affected	and Cleanup A	Action Tak	en.*								
				efine spills extent.								al. Site was
then brought	up to surfac	e grade with	clean back	fill material. Teti	ra Tech	prepared closi	ure report and sub	omitted	it to NMOC	D for revie	w.	
I barahu aarti	fu that the	nformation ai	uon aboua	is true and comp	loto to t	he heet of my	knowledge and w	ndoretor	ad that pure	uent to NM	OCD #	ulas and
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Drintad Mass	. Ura Tarre	on (onant for t	20 <i>C</i>)			Approved by I	District Superviso	or:			1	
Printed Name	. ike i avar	ez (agent for (JUG)									
Title: Project	Manager	•				Approval Date	e: 10/25/12	1	Expiration 1	Date:		

Conditions of Approval:

HOBBS OCD

OCT 22 2012

District I
1625 N. French Dr., Hobbs, NM 28240
Obstrict II
1301 W. Opusit Avenue, Artesia, NM 88210
Obstrict III
1000 Rfo Proses Rund, Artes, NM 87410
District IV
1220 S. St. French Fr., Sund Ve, NM 87509

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

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

Form C-141 ed October 10, 2003 RECEI WHICH 2 Copies to appropriate
District Office in resordance
with Rule 116 on back
add of form

			Rele	ase Notific	cation and C	orrective A	ction			
					OPERA	TOR _	X	Initial Report		Final Report
Name of Co		COG OP			Contact	P	nt Bilis			
Address	550 W.	Toxas, Sulto	100, Mid	land, TX 7970	Tolephone	No. 432-	-230-0077			
Facility Nat	ne Prof	ribition Fode	ral Unit #	2 SWD	Facility Ty	rpe S	WD			
Surface Ow	nor l'o	edoral		Minoral ()wner		La	sse No. (APM)	30-025	-31716
- · · - · · - · · - · · - · · · · · · ·				LOCA	TION OF RE	CLEASE				
linii t,cucr K	Section 11	Tawwdilp 228	Renge 32B	Feet from the 1980	North/South Line HTUGS	Peet from the 2080	East/Wast L WBST	ine County	Len	

L atitude 32,404438	Longitude 103.6473011	
NATURE	of release	
Type of Rolusso Produced Water	Volume of Release 20bbls	Volumo Recovered 10hbls
Source of Release Triplex Pump	Date and Hour of Occurrence 07/17/2010	Date and Hous of Discovery 07/17/2010 10:00 a.m.
Was Immediate Notice Ofven? ☐ Yes ☑ No ☑ Not Required	If YES, To Whom?	
By Whom?	Date and Finne	
Was a Watercourse Reschod? ☐ Yes ☑ No	If YISS, Volume improving the W	morcourse.
If a Watercourse was impacted. Describe Fully.*		
Describe Chusa of Problem and Ramedial Action Tuken.		
Prescribe Chriso of 1.100 icut hind Komedan Vormo fibrogr.		
Union on triplex threads were out and failed. All of the fittings on the tri	plex were replaced.	
Describe Area Affected and Cleanup Action Taken.		
initially 200ble of produced water was released from the triplex pump an	d we were able to recover 10bbls. Ti	ac directations of the spill site measured an
area of 1" x 100", originating around the pump and following the path of	a lease road. The chloride concentra	tion of the produced water in this area is
135,000 ang/i. Tetra Tech will sample the spill site area to delineate my plan (n the BLM/NMOCD for approval prior to any significant remedial	ou work,	se and wo will provent a remediation work
I hereby exitify that the information given above is this and complete to	he best of my knowledge and unders	tand that purspant to NMOCD rules and
regulations all operators are required to report and/or file certain relates a public health or the environment. The acceptance of a C-141 report by th	odifications and perform corrective a	citions for releases which may ordenger
spanig their observes passe trajed to adedition passerfects and councils because the customers. The recolutions is a C 141 relies to a	io contembration that mean a threat to	does not railere me operator et liability
or the environment. In addition, NMOCO acceptance of a C-141 report of	focs not relieve the operator of respon	gradian waar, samoo waar, minan ocanii mibliny for comminee with any other
(bdern), state, or loost laws and/or regulations.		
	OJL CONSER	VATION DIVISION
Signature:		
Printed Name: Insh Russe	Approved by District Supervisor:	
Tale: HSE Coordinator	Approval Date;	Explination Date:
13-mail Address: jasso@conchoresources.com	Conditions of Approved;	Attached
Date: 07/17/2010 Phone: 432-212-2399		Amadian [1]
Attach Additional Shedis If Necessary		

GW 325'

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG - Prohibition Federal Unit #2 SWD Lea County, New Mexico

	21 9	South		31 East	t		21	South	;	32 East			21	South	;	33 Eas
6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2 79
7	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11
18	17	16 630	15	14	13	18	17	16	15	14	13	18	17	16	15	14
19	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23
30	29	28	27	26	25	30	29	28	27	26	25	30	29	28 179	27	26
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35
•	22 9	South	., .	31 Easi	t		22	South	;	32 East		<u> </u>	22	South		33 Ea
6	5	4	3	2	1	6	5	4	3	2	1	6	5	4	3	2
,	8	9	10	11	12	7	8	9	10	11 SITE	12	7	8	9	10	11
8	17	16 448	15	14	13	18	17	16	15	14 382 350	13	18	17	16	15	14
9	20 47	21	22	23	24	19 (S) 280	20	21	22	23	24	19	20	21	22	23
30	29 413	28 444	27	26	25	30	29	28	27	26	25	30	29	28	27	26
31	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35
	23 9	South	:	31 East			23	South		32 East		 -	23	South	:	33 Ea
5	5 354	4 168	3	2	1	6	5	4	3	2	1	6	5	4	3	2
40	8	9	10	11	12	7	8	9	10	11	12	7	8	9	10	11
8	17	16	15	14	13	18	17	16	15	14	13	18	17	16	15	14
9	20	21	22	23	24	19	20	21	22	23	24	19	20	21	22	23
0	29	28	27	26	25	30	29	28	27	26	25	30	29	28	27	26
11	32	33	34	35	36	31	32	33	34	35	36	31	32	33	34	35

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Appendix B

Page Number: 1 of 2

Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX 79705

Work Order: 10091332

Report Date: September 27, 2010

Project Location: Lea Co., NM

Project Name:

COG/Prohibition Fed. #2 SWD

Project Number: 114-6400673

			Date	\mathbf{Time}	Date
Sample	Description	Matrix	Taken	Taken	Received
$2\overline{44451}$	AH-1 0-1'	soil	2010-09-09	00:00	2010-09-10
244452	AH-1 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244453	AH-1 2-2.5'	soil	2010-09-09	00:00	2010-09-10
244454	AH-2 0-1'	soil	2010-09-09	00:00	2010-09-10
244455	AH-2 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244456	AH-3 0-1'	soil	2010-09-09	00:00	2010-09-10
244457	AH-4 0-1'	soil	2010-09-09	00:00	2010-09-10
244458	AH-4 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244459	AH-5 0-1'	soil	2010-09-09	00:00	2010-09-10

		J	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)
244451 - AH-1 0-1'	< 0.0200	< 0.0200	< 0.0200	0.118	120	15.7
244454 - AH-2 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	2.47
244456 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	142	< 2.00
244457 - AH-4 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00
244459 - AH-5 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00

Sample: 244451 - AH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		10300	mg/Kg	4.00

Sample: 244452 - AH-1 1-1.5'

Report Date: Septe	ember 27, 2010	Work Order: 10091332	Pa	age Number: 2 of 2
Param	Flag	Result	Units	RL
Chloride		5640	mg/Kg	4.00
Sample: 244453	- AH-1 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		17300	mg/Kg	4.00
Sample: 244454	- AH-2 0-1'		,	
Param	Flag	Result	Units	RL
Chloride		. 8090	mg/Kg	4.00
Sample: 244455	- AH-2 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		1110	mg/Kg	4.00
Sample: 244456 -	- AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		670	mg/Kg	4.00
Sample: 244457 -	- AH-4 0-1'			
Param	Flag	Result	Units	RL
Chloride		5380	mg/Kg	4.00
Sample: 244458 -	- AH-4 1-1.5'			
Param	Flag	Result	Units	RL
Chloride		12000	mg/Kg	4.00
Sample: 244459 -	AH-5 0-1'			
Param	Flag	Result	Units	RL
Chloride		3790	mg/Kg	4.00

Report Date: April 5, 2011 Work Order: 11032922 Page Number: 1 of 7

Summary Report

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

Report Date: April 5, 2011

Work Order: 11032922

Project Location: Lea Co., NM

Project Name: COG/Prohibition Federal #2

Project Number: 114-6400673

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
262038	SB-1 0-2'	soil	2011-03-24	00:00	2011-03-28
262039	SB-1 3'	soil	2011-03-24	00:00	2011-03-28
262040	SB-1 5'	soil	2011-03-24	00:00	2011-03-28
262041	SB-1 7'	soil	2011-03-24	00:00	2011-03-28
262042	SB-1 10'	soil	2011-03-24	00:00	2011-03-28
262043	SB-1 15'	soil	2011-03-24	00:00	2011-03-28
262044	SB-1 20'	soil	2011-03-24	00:00	2011-03-28
262045	SB-1 25'	soil	2011-03-24	00:00	2011-03-28
262046	SB-1 30'	soil	2011-03-24	00:00	2011-03-28
262047	SB-1 40'	soil	2011-03-24	00:00	2011-03-28
262048	SB-1 50'	soil	2011-03-24	00:00	2011-03-28
262049	SB-1 60'	soil	2011-03-24	00:00	2011-03-28
262050	SB-1 70'	soil	2011-03-24	00:00	2011-03-28
262051	SB-2 0-1'	soil	2011-03-24	00:00	2011-03-28
262052	SB-2 3'	soil	2011-03-24	00:00	2011-03-28
262053	SB-2 5'	soil	2011-03-24	00:00	2011-03-28
262054	SB-2 7'	soil	2011-03-24	00:00	2011-03-28
262055	SB-2 10'	soil	2011-03-24	00:00	2011-03-28
262056	SB-2 15'	soil	2011-03-24	00:00	2011-03-28
262057	SB-2 20'	soil	2011-03-24	00:00	2011-03-28
262058	SB-3 0-1'	soil	2011-03-24	00:00	2011-03-28
262059	SB-3 3'	soil	2011-03-24	00:00	2011-03-28
262060	SB-3 5'	soil	2011-03-24	00:00	2011-03-28
262061	SB-3 7'	soil	2011-03-24	00:00	2011-03-28
262062	SB-3 10'	soil	2011-03-24	00:00	2011-03-28
262063	SB-3 15'	soil	2011-03-24	00:00	2011-03-28
262064	SB-3 20'	soil	2011-03-24	. 00:00	2011-03-28
262065	SB-4 0-1'	soil	2011-03-25	00:00	2011-03-28
262066	SB-4 3'	soil	2011-03-25	00:00	2011-03-28
262067	SB-4 5'	soil	2011-03-25	00:00	2011-03-28

Report Date: April 5, 2011		Work Order: 11032922		Page Number: 2 of 7	
Sample	Description	Matrix	Date Taken	Time Taken	Date Received
262068	SB-4 7'	soil	2011-03-25	00:00	2011-03-28
262069	SB-4 10'	soil	2011-03-25	00:00	2011-03-28
262070	SB-4 15'	soil	2011-03-25	00:00	2011-03-28
262071	SB-4 20'	soil	2011-03-25	00:00	2011-03-28
262072	SB-5 0-1'	soil	2011-03-25	00:00	2011-03-28
262073	SB-5 3'	soil	2011-03-25	00:00	2011-03-28
262074	SB-5 5'	soil	2011-03-25	00:00	2011-03-28
262075	SB-5 7'	soil	2011-03-25	00:00	2011-03-28
262076	SB-5 10'	soil	2011-03-25	00:00	2011-03-28
262077	SB-5 15'	soil	2011-03-25	00:00	2011-03-28
_					
-	038 - SB-1 0-2'	T.	legalt.	Unite	RI.
Sample: 262 Param Chloride	038 - SB-1 0-2' Flag		tesult. 8290	Units mg/Kg	RL 4.00
Param Chloride					
Param Chloride Sample: 262	Flag				
Param Chloride Sample: 262	Flag	F	8290	mg/Kg	4.00
Param Chloride Sample: 262 Param Chloride	Flag	F	8290 tesult	mg/Kg Units	4.00
Param Chloride Sample: 262 Param Chloride Sample: 262	Flag 039 - SB-1 3' Flag 040 - SB-1 5'	F 1	8290 tesult 2200	mg/Kg Units mg/Kg	RL 4.00
Param Chloride Sample: 262 Param Chloride Sample: 262 Param	Flag 039 - SB-1 3' Flag	F 1	8290 tesult	mg/Kg Units	4.00
Param Chloride Sample: 262 Param Chloride Sample: 262 Param Chloride	Flag 039 - SB-1 3' Flag 040 - SB-1 5'	F 1	8290 tesult 2200	mg/Kg Units mg/Kg Units	4.00 RL 4.00
Param Chloride Sample: 262 Param Chloride Sample: 262 Param Chloride	Flag 039 - SB-1 3' Flag 040 - SB-1 5' Flag	F 1 F 1	8290 tesult 2200	mg/Kg Units mg/Kg Units	4.00 RL 4.00

Sample: 262043 - SB-1 15'

Sample: 262042 - SB-1 10'

Param

Chloride

Result

14000

Units

mg/Kg

RL

4.00

Report Date: April 5, 2011		Work Order: 11032922	Page Number: 3 of 7	
Param	Flag	Result	Units	m RL
Chloride		12600	mg/Kg	, 4.00
•				
Sample: 262044 -	- SB-1 20'			
Param	Flag	Result	Units	RL
Chloride		6530	mg/Kg	4.00
Sample: 262045 -	· SB-1 25'			
Param	Flag	Result	Units	RL
Chloride	1 105	17400	mg/Kg	4.00
Sample: 262046 -		,		
Param	Flag	Result	Units	RL
Chloride		8540	nig/Kg	4.00
Sample: 262047 -	SB-1 40'			
Param	Flag	Result	Units	RL
Chloride		2970	mg/Kg	4.00
Sample: 262048 -	SB-1 50'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 262049 -	SB-1 60'			
Param	Flag	Result	Units	· RL
Chloride		251	mg/Kg	4.00
Sample: 262050 -	SB-1 70'			
Param	Flag	Řesult	Units	RL
Chloride		208	mg/Kg	4.00

Report Date: April 5, 2011		Work Order: 11032922		Page Number: 4 of 7	
Sample: 262051 -	SB-2 0-1'	·			
Param	Flag	Result	Units	RL	
Chloride		3140	mg/Kg	4.00	
Sample: 262052 -	SB-2 3'				
Param	Flag	Result	Units	RL	
Chloride		4580	mg/Kg	4.00	
Sample: 262053 -	SB-2 5'				
Param	Flag	Result	Units	RL	
Chloride .		2970	mg/Kg	4.00	
Sample: 262054 -	SB-2 7'				
Param	Flag	Result	Units	RL	
Chloride		208	mg/Kg	4.00	
Sample: 262055 -	SB-2 10'				
Param	Flag	Result	Units	RL	
Chloride		. <200	mg/Kg	4.00	
Sample: 262056 -	SB-2 15'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262057 -	SB-2 20'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262058 -	SB-3 0-1'				
Param	Flag	Result	Units	RL	
Chloride	·- U	2350	mg/Kg	4.00-	

Report Date: April 5, 2011		Work Order: 11032922	Pag	Page Number: 5 of 7	
Sample: 262059	- SB-3 3'				
Param	Flag	Result	Units	RL	
Chloride		612	mg/Kg	4.00	
Sample: 262060	- SB-3 5'				
Param	Flag	Result	Units	RL	
Chloride		612	mg/Kg	4.00	
Sample: 262061	- SB-3 7'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262062 -	- SB-3 10'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262063 -	- SB-3 15'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262064 -	· SB-3 20'	•			
Param	Flag .	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262065 -	SB-4 0-1'				
Param	Flag	Result	Units	RL	
Chloride		314	mg/Kg	4.00	
Sample: 262066 -	SB-4 3'				
Param	Flag	Result	Units	RL	
Chloride		2110	mg/Kg	- 0.22	

Report Date: April 5, 2011		Work Order: 11032922	Page	Page Number: 6 of 7	
Sample: 262067 -	SB-4 5'				
Param	Flag	Result	Units	RL	
Chloride		4520	mg/Kg	4.00	
Sample: 262068 -	SB-4 7'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262069 -	SB-4 10'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262070 -	SB-4 15'		·		
Param	Flag	Result	Units	RL	
Chloride		379	mg/Kg	4.00	
Sample: 262071 -	SB-4 20'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	
Sample: 262072 -	SB-5 0-1'				
Param	Flag	Result	Units	RL	
Chloride		3150	mg/Kg	4.00	
Sample: 262073 -	SB-5 3'				
Param	Flag	Result	Units	RL	
Chloride	1 1009	6400	mg/Kg	4.00	
Sample: 262074 -	SB-5 5'				
Param	Flag	Result	Units	RL	
Chloride		1360	mg/Kg	4.00	

Report Date: April 5, 2011		Work Order: 11032922	Page	Page Number: 7 of 7		
Sample: 262075 - SB-5 7'						
Param	Flag	Result	Units	R.L		
Chloride		<200	mg/Kg	4.00		
Sample: 262076	- SB-5 10'	Result	Units .	m RL		
Chloride		<200	mg/Kg	4.00		
Sample: 262077	- SB-5 15'		·			
Param	Flag	Result	Units	RL		
Chloride		<200	mg/Kg	4.00		



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, lexas 79703

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Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA WFWB38444Y0909

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003

El Paso:

T104704221-08-TX

Midland:

T104704392-08-TX

LELAP-02002 Kansas E-10317

Analytical and Quality Control Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date:

September 27, 2010

Work Order: 10091332

Project Location: Lea Co., NM

Project Name:

COG/Prohibition Fed. #2 SWD

Project Number:

114-6400673

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	. Received
244451	AH-1 0-1'	soil	2010-09-09	00:00	2010-09-10
244452	AH-1 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244453	AH-1 2-2.5'	soil	2010-09-09	00:00	2010-09-10
244454	AH-2 0-1'	soil	2010-09-09	00:00	2010-09-10
244455	AH-2 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244456	AH-3 0-1'	soil	2010-09-09	00:00	2010-09-10
244457	AH-4 0-1'	soil	2010-09-09	. 00:00	2010-09-10
244458	AH-4 1-1.5'	soil	2010-09-09	00:00	2010-09-10
244459	AH-5 0-1'	soil	2010-09-09	00:00	2010-09-10

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 24 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

Standard Flags

 ${f B}$ - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/Prohibition Fed. #2 SWD were received by TraceAnalysis, Inc. on 2010-09-10 and assigned to work order 10091332. Samples for work order 10091332 were received intact at a temperature of 3.7 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	QC	Analysis
\Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	63055	2010-09-15 at 08:15	73591	2010-09-15 at 09:19
BTEX	S 8021B	63134	2010-09-16 at 12:00	73621	2010-09-16 at 20:46
Chloride (Titration)	SM 4500-Cl B	63191	2010-09-20 at 12:43	73697	2010-09-21 at 15:06
Chloride (Titration)	SM 4500-Cl B	63192	2010-09-20 at 12:43	73782	2010-09-23 at 09:52
TPH DRO - NEW	S 8015 D	63047	2010-09-14 at 11:48	73497	2010-09-14 at 11:48
TPH GRO	S 8015 D	63055	2010-09-15 at 08:15	73583	2010-09-15 at 09:46
TPH GRO	S 8015 D	63134	2010-09-16 at 12:00	73620	2010- <u>09-16</u> at <u>21:14</u>

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 10091332 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 4 of 24 Lea Co., NM

Analytical Report

Sample: 244451 - AH-1 0-1'

Laboratory: Midland

BTEX Analysis: QC Batch: 73591 Prep Batch: 63055

Analytical Method: Date Analyzed:

S 8021B 2010-09-15 Sample Preparation: 2010-09-15

Prep Method: S 5035 Analyzed By: AGPrepared By: AG

RL

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	mg/Kg	1	0.0200
Ethylbenzene		< 0.0200	mg/Kg	1	0.0200
Xylene		0.118	mg/Kg	1	0.0200

					$_{ m Spike}$	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	\mathbf{Amount}	Recovery	Limits
Trifluorotoluene (TFT)		2.33	mg/Kg	1 .	2.00	116	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.65	mg/Kg	_ 1	2.00	132	38.4 - 157

Sample: 244451 - AH-1 0-1'

Laboratory:

Midland

Chloride (Titration) Analysis: QC Batch: 73697 Prep Batch: 63191

Analytical Method: SM 4500-Cl B Date Analyzed: 2010-09-21 Sample Preparation: 2010-09-20

Prep Method: N/A Analyzed By: ARPrepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		10300	mg/Kg	100	4.00

Sample: 244451 - AH-1 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW QC Batch: 73497 Prep Batch: 63047

Analytical Method: S 8015 D Date Analyzed: 2010-09-14 Sample Preparation: 2010-09-14

Prep Method: N/A Analyzed By: kg Prepared By:

RI

Parameter	•	Flag	Result	Units	Dilution	RL
DRO			120	mg/Kg	1	50.0

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		112	mg/Kg	1	100	112	70 - 130

Sample: 244451 - AH-1 0-1'

Laboratory:

Midland

TPH GRO Analysis: QC Batch: 73583 Prep Batch: 63055

Analytical Method: S 8015 D Date Analyzed: 2010-09-15

Sample Preparation: 2010-09-15 Prep Method: S 5035 Analyzed By: AG

Prepared By:

Page Number: 5 of 24

Lea Co., NM

AG

RL

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		15.7	mg/Kg	1	2.00

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.29	mg/Kg	1	2.00	114	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.33	mg/Kg	1	2.00	116	42 - 159

Sample: 244452 - AH-1 1-1.5'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 73782 Prep Batch: 63192

Analytical Method: SM 4500-Cl B Date Analyzed: 2010-09-23 Sample Preparation:

Prep Method: N/A Analyzed By: 2010-09-22

Prepared By: AR

AR

Parameter	Flag	Result	Units	Dilution	RL
Chloride		5640	mg/Kg	100	4.00

Sample: 244453 - AH-1 2-2.5'

Laboratory:

Chloride

Midland

Analysis: Chloride (Titration) QC Batch: 73782 Prep Batch: 63192

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2010-09-23 2010-09-22

Prep Method: N/A Analyzed By: ARPrepared By: AR

Parameter Flag

RLResult Units Dilution RL17300 100 4.00 mg/Kg

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 6 of 24 Lea Co., NM

Sample: 244454 - AH-2 0-1'

Laboratory: Midland

Analysis: BTEX QC Batch: 73591 Prep Batch: 63055 Analytical Method: S 8021B Date Analyzed: 2010-09-15 Sample Preparation: 2010-09-15 Prep Method: S 5035 Analyzed By: AG Prepared By: AG

RL

		- 			
Parameter	Flag	Result	${f Units}$	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	mg/Kg	1	0.0200
Ethylbenzene		< 0.0200	mg/Kg	1	0.0200
Xylene		< 0.0200	mg/Kg	1	0.0200

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.51	mg/Kg	1	2.00	126	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.70	m mg/Kg	1	2.00	135	38.4 - 157

Sample: 244454 - AH-2 0-1'

Laboratory: Midland

Chloride (Titration)

Analysis: Chlorid QC Batch: 73782 Prep Batch: 63192 Analytical Method: SM 4500-Cl B
Date Analyzed: 2010-09-23
Sample Preparation: 2010-09-22

Prep Method: N/A Analyzed By: AR Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		8090	mg/Kg	100	4.00

Sample: 244454 - AH-2 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW QC Batch: 73497
Prep Batch: 63047

Analytical Method: S 8015 D
Date Analyzed: 2010-09-14
Sample Preparation: 2010-09-14

Prep Method: N/A
Analyzed By: kg
Prepared By: kg

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		< 50.0	mg/Kg	1	50.0

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		101	mg/Kg	1	100	101	70 - 130

Report Date: September 27, 2010 Work Order: 10091332 Page Number: 7 of 24 114-6400673 COG/Prohibition Fed. #2 SWD Lea Co., NM

Sample:	244454	-	AH-2	0-1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 73583 Prep Batch: 63055 Analytical Method: S 8015 D
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

Prep Method: S 5035 Analyzed By: AG Prepared By: AG

RL

Parameter	Flag	Result	Units	Dilution .	RL
GRO		2.47	mg/Kg	1	2.00

				<i>.</i> -	Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.45	mg/Kg	1	2.00	122	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.35	m mg/Kg	1	2.00	118	42 - 159

Sample: 244455 - AH-2 1-1.5'

Laboratory: Midland

Analysis: Chloride (Titration)
QC Batch: 73782
Prep Batch: 63192

Analytical Method: SM 4500-C Date Analyzed: 2010-09-23 Sample Preparation: 2010-09-22

 SM 4500-Cl B
 Prep Method:
 N/A

 2010-09-23
 Analyzed By:
 AR

 2010-09-22
 Prepared By:
 AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		1110	mg/Kg	100	4.00

Sample: 244456 - AH-3 0-1'

Laboratory: Midland

Analysis: BTEX QC Batch: 73591 Prep Batch: 63055

Analytical Method: S 8021B
Date Analyzed: 2010-09-15
Sample Preparation: 2010-09-15

Prep Method: S 5035 Analyzed By: AG Prepared By: AG

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0200	mg/Kg	1 .	0.0200
Toluene		< 0.0200	mg/Kg	1	0.0200
Ethylbenzene		< 0.0200	mg/Kg	1	0.0200
Xylene		< 0.0200	mg/Kg	1	0.0200

					$\mathbf{S}_{\mathbf{P}i\mathbf{k}\mathbf{e}}$	Percent	Recovery
Surrogate	Flag	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.29	mg/Kg	1	2.00	114	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.54	mg/Kg	1	2.00	127	38.4 - 157

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 8 of 24 Lea Co., NM

Sample: 244456 - AH-3 0-1'

Laboratory: Analysis:

Midland

Chloride (Titration)

Flag

Flag

73782

Analytical Method: Date Analyzed:

SM 4500-Cl B

2010-09-23

Prep Method: N/A

QC Batch: Prep Batch: 63192

Sample Preparation: 2010-09-22

Analyzed By: Prepared By:

ARAR

RL

4.00

RL

Parameter Chloride

Result 670

Units mg/Kg Dilution

50

Sample: 244456 - AH-3 0-1'

Laboratory:

Midland

Analysis:

TPH DRO - NEW

Analytical Method:

S 8015 D

Prep Method: N/A

QC Batch:

73497

Date Analyzed: Sample Preparation:

2010-09-14 2010-09-14

kg Analyzed By: Prepared By:

Prep Batch: 63047

RL

Parameter DRO

Result Units 142

Dilution

kg

70 - 130

RL

mg/Kg 50.0 Spike Percent Recovery Flag Result Units Dilution Amount Recovery Limits

Surrogate 100 n-Tricosane 111 mg/Kg 1 111

Sample: 244456 - AH-3 0-1'

Laboratory:

Midland

Analysis: QC Batch:

Parameter

GRO

TPH GRO 73583

Analytical Method:

S 8015 D 2010-09-15 Prep Method: Analyzed By:

Prep Batch: 63055

Date Analyzed: Sample Preparation: 2010-09-15

AG Prepared By:

RL

AG

S 5035

Flag

Result < 2.00

Units mg/Kg

Dilution

RL

2.00

Spike Percent Recovery Flag Result Units Dilution Surrogate Amount Recovery Limits Trifluorotoluene (TFT) 2.30mg/Kg 1 2.00 115 48.5 - 152 2.30 4-Bromofluorobenzene (4-BFB) mg/Kg 1 2.00 115 42 - 159

Report Date: September 27, 2010 Work Order: 10091332 Page Number: 9 of 24 114-6400673 COG/Prohibition Fed. #2 SWD Lea Co., NM

Sample: 244457 - AH-4 0-1'

Laboratory: Midland

BTEX Prep Method: S 5035 Analysis: Analytical Method: S 8021B Analyzed By: AGQC Batch: 73621 Date Analyzed: 2010-09-16 Prepared By: Prep Batch: 63134 Sample Preparation: 2010-09-16 AG

. RL Parameter Flag Result Units Dilution RLBenzene < 0.0200 mg/Kg 0.0200 Toluene < 0.0200 1 0.0200 mg/Kg 1 Ethylbenzene < 0.0200 0.0200mg/Kg Xylene < 0.0200 1 0.0200mg/Kg

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		$\cdot 2.24$	mg/Kg	1	2.00	112	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.37	mg/Kg	1	2.00	118	38.4 - 157

Sample: 244457 - AH-4 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 73782 Date Analyzed: 2010-09-23 Analyzed By: AR63192 Prep Batch: Sample Preparation: 2010-09-22 Prepared By: AR

Sample: 244457 - AH-4 0-1'

Laboratory: Midland

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: 73497 Date Analyzed: 2010-09-14 Analyzed By: kg Prep Batch: 63047 Sample Preparation: Prepared By: 2010-09-14

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	•	96.2	mg/Kg	1	100	96	70 - 130

Report Date: September 27, 2010 Work Order: 10091332 Page Number: 10 of 24 114-6400673 COG/Prohibition Fed. #2 SWD Lea Co., NM

Sample: 244457 - AH-4 0-1'

Laboratory: Midland

Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035 QC Batch: 73620 Date Analyzed: 2010-09-16 Analyzed By: AG Prep Batch: 63134 Sample Preparation: 2010-09-16 Prepared By: AG

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		< 2.00	mg/Kg	1	2.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.25	mg/Kg	1	2.00	112	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.22	mg/Kg	1	2.00	111	42 - 159

Sample: 244458 - AH-4 1-1.5'

Laboratory: Midland

Chloride (Titration) Analysis: Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 73782 Date Analyzed: 2010-09-23 Analyzed By: ARPrep Batch: Sample Preparation: 2010-09-22 Prepared By: 63192AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		12000	mg/Kg	100	4.00

Sample: 244459 - AH-5 0-1'

Laboratory: Midland

Analysis: BTEX Analytical Method: S 8021B Prep Method: S 5035 QC Batch: 73621 Date Analyzed: 2010-09-16 Analyzed By: \mathbf{AG} Prep Batch: 63134 Sample Preparation: 2010-09-16 Prepared By: AG

		m RL			
Parameter	Flag	Result	$\mathbf{U}\mathbf{nits}$	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	mg/Kg	1	0.0200
Ethylbenzene		< 0.0200	mg/Kg	1	0.0200
Xylene		< 0.0200	mg/Kg	1	0.0200

					Spike	$\operatorname{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	${ m Units}$	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.31	mg/Kg	1	2.00	116	52.8 - 137
4-Bromofluorobenzene (4-BFB)		2.47	mg/Kg	1	2.00	124	38.4 - 157

Sample: 244459 - AH-5 0-1' Midland Laboratory: Chloride (Titration) Analytical Method: Prep Method: N/A Analysis: SM 4500-Cl B 73782 QC Batch: Date Analyzed: 2010-09-23 Analyzed By: AR 63192 Prep Batch: Sample Preparation: 2010-09-22 Prepared By: ARRLResult Flag Units RLParameter Dilution 3790 Chloride mg/Kg 100 4.00 Sample: 244459 - AH-5 0-1' Laboratory: Midland TPH DRO - NEW Analytical Method: N/A Analysis: S 8015 D Prep Method: QC Batch: 73497 Date Analyzed: 2010-09-14 Analyzed By: kg Prep Batch: 63047 Sample Preparation: 2010-09-14 Prepared By: kg RLParameter Flag Result Units Dilution RL< 50.0 50.0 $\overline{\text{DRO}}$ mg/Kg 1 Spike Percent Recovery Surrogate Flag Result Units Dilution Amount Recovery Limits 70 - 130 97.5 98 n-Tricosane mg/Kg 1 100 Sample: 244459 - AH-5 0-1' Midland Laboratory: TPH GRO Analytical Method: Analysis: S 8015 D Prep Method: S 5035 73620 QC Batch: Date Analyzed: 2010-09-16 Analyzed By: AG

Sample Preparation:

Units

mg/Kg

mg/Kg

RL

Result

< 2.00

Result

2.30

2.23

2010-09-16

Units

Dilution

1

1

mg/Kg

Work Order: 10091332

COG/Prohibition Fed. #2 SWD

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Prepared By:

Dilution

Percent

Recovery

115

112

Spike

Amount

2.00

2.00

AG

Recovery

Limits

48.5 - 152

42 - 159

RL

2.00

Lea Co., NM

Report Date: September 27, 2010

114-6400673

Prep Batch: 63134

Trifluorotoluene (TFT)

4-Bromofluorobenzene (4-BFB)

Flag

Flag

Parameter

Surrogate

GRO

Report Date: September 27, 2010 Work Order: 10091332 Page Number: 12 of 24 114-6400673 COG/Prohibition Fed. #2 SWD Lea Co., NM

Method Blank (1) QC Batch: 73497 Date Analyzed: 2010-09-14 Analyzed By: QC Batch: 73497 kg QC Preparation: Prepared By: Prep Batch: 63047 2010-09-14 MDL Result Units RLParameter Flag DRO <14.5 mg/Kg 50

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		101	mg/Kg	. 1	100	101	70 - 130

Method Blank (1) QC Batch: 73583

QC Batch: 73583 Date Analyzed: 2010-09-15 Analyzed By: AG
Prep Batch: 63055 QC Preparation: 2010-09-15 Prepared By: AG

				,	$_{ m Spike}$	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.42	mg/Kg	1	2.00	121	67.6 - 150
4-Bromofluorobenzene (4-BFB)		2.19	${ m mg/Kg}$	1 .	2.00	110	52.4 - 130

Method Blank (1) QC Batch: 73591

QC Batch: 73591 Date Analyzed: 2010-09-15 Analyzed By: AG
Prep Batch: 63055 QC Preparation: 2010-09-15 Prepared By: AG

MDL Units RLParameter Flag Result Benzene < 0.0150 mg/Kg 0.02 mg/Kg Toluene < 0.00950 0.02 Ethylbenzene < 0.0106 mg/Kg 0.02 Xylene < 0.00930 mg/Kg 0.02

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.31	mg/Kg	1	2.00	116	66.6 - 122
4-Bromofluorobenzene (4-BFB)		2.63	mg/Kg	1	2.00	132	55.4 - 132

Report Date: September 27, 2010 Work Order: 10091332 Page Number: 13 of 24
114-6400673 COG/Prohibition Fed. #2 SWD Lea Co., NM

Mathed Blank (1) OC Batch: 73620

Method Blank (1) QC Batch: 73620 QC Batch: 73620 Date Analyzed: 2010-09-16 Analyzed By: AG QC Preparation: 2010-09-16 Prep Batch: 63134 Prepared By: AG MDL Flag Result RLParameter Units < 1.65 \overline{GRO} mg/Kg $\overline{2}$ Spike Percent Recovery Flag Surrogate Result Units Dilution Amount Recovery Limits Trifluorotoluene (TFT) 2.10 mg/Kg 1 2.00 105 67.6 - 150 4-Bromofluorobenzene (4-BFB) 1.98 mg/Kg 1 2.00 99 52.4 - 130

QC Batch: 73621 Date Analyzed: 2010-09-16 Analyzed By: AG
Prep Batch: 63134 QC Preparation: 2010-09-16 Prepared By: AG

MDL Parameter Flag Result Units RLBenzene < 0.0150 mg/Kg 0.02Toluene < 0.00950 mg/Kg 0.02 0.02Ethylbenzene < 0.0106 mg/Kg Xylene < 0.00930 mg/Kg 0.02

Spike Percent Recovery Units Flag Result Dilution Surrogate Amount Recovery Limits Trifluorotoluene (TFT) 2.06 mg/Kg 2.00103 66.6 - 122 1 4-Bromofluorobenzene (4-BFB) 2.13 2.00 mg/Kg 1 106 55.4 - 132

QC Batch: 73697 Date Analyzed: 2010-09-21 Analyzed By: AR
Prep Batch: 63191 QC Preparation: 2010-09-20 Prepared By: AR

Method Blank (1) QC Batch: 73782

Method Blank (1)

Method Blank (1)

QC Batch: 73621

QC Batch: 73697

QC Batch: 73782 Date Analyzed: 2010-09-23 Analyzed By: AR
Prep Batch: 63192 QC Preparation: 2010-09-20 Prepared By: AR

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 14 of 24 Lea Co., NM

		MDL		
Parameter	Flag	Result	${f Units}$	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:

114-6400673

73497

Date Analyzed:

2010-09-14

Analyzed By: kg

Prep Batch: 63047

QC Preparation: 2010-09-14

Prepared By: kg

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	235	mg/Kg	1	250	<14.5	94	57.4 - 133.4

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	\mathbf{Limit}
DRO	224	mg/Kg	1	250	<14.5	90	57.4 - 133.4	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	\mathbf{Units}	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
n-Tricosane	115	115	mg/Kg	1	100	115	115	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

73583

Date Analyzed:

2010-09-15

Spike

Matrix

Analyzed By: AG

Prep Batch: 63055

QC Preparation:

2010-09-15

Prepared By: AG

Rec.

Limit

Param Result Dil. Units Amount Result Rec. GRO 14.4 <1.65 69.9 - 95.4 mg/Kg 1 20.0 72

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

LCS

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	16.4	mg/Kg	1	20.0	< 1.65	82	69.9 - 95.4	. 13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			$\mathbf{S}_{\mathbf{p}ike}$	LCS	LCSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.00	2.11	mg/Kg	1	2.00	100	106	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.42	1.34	mg/Kg	1	2.00	71	67	65.2 - 132

114 - 6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 15 of 24 Lea Co., NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 73591 63055 Date Analyzed: QC Preparation:

2010-09-15 2010-09-15

Analyzed By: AG Prepared By: AG

LCS Spike Rec. Matrix Result Units Dil. Amount Limit Param Result Rec. Benzene 2.00 mg/Kg 1 2.00< 0.0150 10081.9 - 108 Toluene 1.94 mg/Kg 1 2.00 97 81.9 - 107 < 0.00950 Ethylbenzene 1.85 mg/Kg 1 2.00 < 0.0106 92 78.4 - 107 Xylene 5.35 mg/Kg 1 6.00 < 0.00930 89 79.1 - 107

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	2.12	mg/Kg	1	2.00	< 0.0150	106	81.9 - 108	6	20
Toluene	2.05	mg/Kg	1	2.00	< 0.00950	102	81.9 - 107	6	20
Ethylbenzene	1.98	mg/Kg	1	2.00	< 0.0106	99	78.4 - 107	7	20
Xylene	5.74	mg/Kg	1	6.00	< 0.00930	96	79.1 - 107	7	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCS	LCSD			Spike	LCS	LCSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.04	2.13	mg/Kg	1	2.00	102	106	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.50	1.61	mg/Kg	1	2.00	75	80	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch:

73620

Date Analyzed:

2010-09-16 2010-09-16 Analyzed By: AG

Prep Batch: 6

63134

QC Preparation: 20

Prepared By: AG

	LCS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	18.3	${ m mg/Kg}$	1	20.0	< 1.65	92	69.9 - 95.4

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		LCSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	1	19.9	mg/Kg	1	20.0	< 1.65	100	69.9 - 95.4	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

 $continued \dots$

¹LCSD analyte out of range. LCS/LCSD has a RPD within limits. Therfore, LCS shows extraction occurred properly.

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 16 of 24 Lea Co., NM

control spikes continued								
· · · · · · · · · · · · · · · · · · ·	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.23	2.18	mg/Kg	1	2.00	112	109	61.9 - 142
			mg/Kg				117	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch:

73621

Date Analyzed:

2010-09-16

Analyzed By: AG

Prep Batch:

63134

QC Preparation: 2010-09-16

Prepared By: AG

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	2.12	mg/Kg	1	2.00	< 0.0150	106	81.9 - 108
Toluene	2.09	mg/Kg	1	2.00	< 0.00950	104	81.9 - 107
Ethylbenzene	2.08	mg/Kg	1	2.00	< 0.0106	104	78.4 - 107
Xylene	6.27	mg/Kg	1	6.00	< 0.00930	104	79.1 - 107

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	\mathbf{Limit}
Benzene	2.04	mg/Kg	1	2.00	< 0.0150	102	81.9 - 108	4	20
Toluene	2.07	mg/Kg	1	2.00	< 0.00950	104	81.9 - 107	1	20
Ethylbenzene	2.12	mg/Kg	1	2.00	< 0.0106	106	78.4 - 107	2	20
Xylene	6.28	mg/Kg	1	6.00	< 0.00930	105	79.1 - 107	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	$egin{array}{c} ext{LCS} \ ext{Result} \end{array}$	LCSD Result	Units	Dil.	$egin{array}{c} ext{Spike} \ ext{Amount} \end{array}$	$\frac{\text{LCS}}{\text{Rec.}}$	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.09	2.20	mg/Kg	1	2.00	104	110	70.2 - 114
4-Bromofluorobenzene (4-BFB)	2.41	2.39	mg/Kg	1	2.00	120	120	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch:

73697

Prep Batch: 63191

Date Analyzed:

2010-09-21

QC Preparation: 2010-09-20

Analyzed By: AR

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit
Chloride	97.7	mg/Kg	1	100	< 2.18	98	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

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Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 17 of 24 Lea Co., NM

	LCSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	103	m mg/Kg	1	100	< 2.18	103	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch:

73782

Date Analyzed:

2010-09-23

Analyzed By: AR

Prep Batch: 63192

QC Preparation: 2010-09-20

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil .	${f Amount}$	Result	Rec.	$_{ m Limit}$
Chloride	97.1	mg/Kg	1	100	< 2.18	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec .		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1)

Spiked Sample: 244471

QC Batch:

73497

Date Analyzed:

2010-09-14

Analyzed By: kg

Prep Batch: 63047

QC Preparation: 2010-09-14

Prepared By: kg

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	226	mg/Kg	1	250	16.9	84	35.2 - 167.1

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil .	Amount	Result	Rec.	\mathbf{Limit}	RPD	Limit
DRO	223	mg/Kg	1	250	16.9	82	35.2 - 167.1	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	$\mathrm{Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
n-Tricosane	109	109	mg/Kg	1	100	109	109	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 244319

QC Batch:

73583

Date Analyzed:

QC Preparation: 2010-09-15

2010-09-15

Analyzed By: AG Prepared By: AG

Prep Batch:

63055

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 18 of 24

Lea Co., NM

	MS		-	Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	${ m Rec.}$	Limit
GRO	16.3	mg/Kg	1	20.0	< 1.65	82	61.8 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$	RPD	Limit
GRO	2	20.1	mg/Kg	1	20.0	<1.65	100	61.8 - 114	21	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

,	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	\mathbf{Units}	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.96	2.31	ıng/Kg	1	2	98	116	50 - 162
4-Bromofluorobenzene (4-BFB)	1.73	2.09	m mg/Kg	1	2	86	104	50 - 162

Matrix Spike (MS-1) Spiked

Spiked Sample: 244456

QC Batch:

73591

Date Analyzed:

2010-09-15

Analyzed By: AG Prepared By: AG

Prep Batch: 63055

QC Preparation: 2010-09-15

MS Spike Matrix. Rec. Param Result Units Dil. Amount Result Limit Rec. Benzene 2.0080.5 - 112 2.16 mg/Kg 1 < 0.0150 108 2.00 Toluene 2.21 mg/Kg 1 < 0.00950 110 82.4 - 113 3 Ethylbenzene 2.34 mg/Kg 1 2.00 83.9 - 114 < 0.0106 117 6.92 Xylene mg/Kg 1 6.00 < 0.00930 115 84 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	5	2.42	mg/Kg	1	2.00	< 0.0150	121	80.5 - 112	11	20
Toluene	6	2.46	mg/Kg	1	2.00	< 0.00950	123	82.4 - 113	11	20
Ethylbenzene	7	2.61	mg/Kg	.1	2.00	< 0.0106	130	83.9 - 114	11	20
Xylene	8	7.88	mg/Kg	1	6.00	< 0.00930	131	84 - 114	13	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

continued ...

²MS/MSD RPD out of RPD Limits. Use LCS/LCSD to demonstrate analysis is under control.

³Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

⁵MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

⁶MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

⁷MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occurred properly.

⁸MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occurred properly.

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 19 of 24 Lea Co., NM

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	$ \begin{array}{r} 2.34 \\ 11 \\ 2.72 \end{array} $	$\frac{2.54}{2.93}$	mg/Kg mg/Kg	1 1	2 2	117 136	127 146	41.3 - 117 35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 244471

QC Batch:

73620

Date Analyzed:

2010-09-16

Analyzed By: AG

Prep Batch: 63134

Prepared By: AG

QC Preparation: 2010-09-16

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	22.4	mg/Kg	1	20.0	<1.65	112	61.8 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$	RPD	Limit
GRO	22.6	mg/Kg	1	20.0	< 1.65	113	61.8 - 114	1	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	$_{ m Units}$	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
Trifluorotoluene (TFT)	2.28	2.23	mg/Kg	1	2	114	112	50 - 162
4-Bromofluorobenzene (4-BFB)	2.43	2.49	mg/Kg	1	2	122	124	50 - 162

Spiked Sample: 244760 Matrix Spike (MS-1)

QC Batch:

73621

Prep Batch: 63134

Date Analyzed: QC Preparation: 2010-09-16

2010-09-16

Analyzed By: AG

Prepared By: AG

		MS			$_{ m Spike}$	Matrix		Rec.
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	12	2.54	mg/Kg	1	2.00	< 0.0150	127	80.5 - 112
Toluene	13	2.60	mg/Kg	1	2.00	< 0.00950	130	82.4 - 113
Ethylbenzene	14	2.86	mg/Kg	1	2.00	< 0.0106	143	83.9 - 114
1								

 $continued \dots$

 $^{^9\}mathrm{High}$ surrogate recovery due to peak interference.

¹⁰High surrogate recovery due to peak interference.

¹¹High surrogate recovery due to peak interference.

¹²Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹³Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹⁴Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

Report Date: September 27, 2010 114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 20 of 24 Lea Co., NM

matrix	snikes	continued		

		MS			Spike	Matrix		${ m Rec.}$
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit
Xylene	15	8.36	mg/Kg	1	6.00	< 0.00930	139	84 - 114

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			Spike	Matrix		Rec.		RPD
Param	•	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	16	2.55	mg/Kg	1	2.00	< 0.0150	128	80.5 - 112	0	20
Toluene	17	2.64	mg/Kg	1	2.00	< 0.00950	132	82.4 - 113	2	20
Ethylbenzene	18	2.88	mg/Kg	1	2.00	< 0.0106	144	83.9 - 114	1	20
Xylene	19	8.57	mg/Kg	1	6.00	< 0.00930	143	84 - 114	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MS	MSD			Spike	MS	MSD	Rec .
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)		1.91	2.32	mg/Kg	1	2	96	116	41.3 - 117
4-Bromofluorobenzene (4-BFB)	20	2.33	2.86	mg/Kg	1	2	116	143	35.5 - 129

Matrix Spike (MS-1)

Spiked Sample: 244451

QC Batch: Prep Batch: 63191

73697

Date Analyzed:

2010-09-21

Analyzed By: AR Prepared By: AR

QC Preparation: 2010-09-20

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	20200	mg/Kg	100	10000	10300	99	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD		-	Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	20500	mg/Kg	100	10000	10300	102	85 - 115	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 244461

QC Batch:

73782

Date Analyzed:

2010-09-23

Analyzed By: AR

Prep Batch: 63192

QC Preparation: 2010-09-20

Prepared By: AR

²⁰High surrogate recovery due to peak interference.

¹⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

¹⁶MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

¹⁷MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

¹⁸MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occured properly.

¹⁹MSD analyte out of range. MS/MSD has a RPD within limits. Therfore, MS shows extraction occurred properly.

114 - 6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 21 of 24 Lea Co., NM

	MS			$_{ m Spike}$	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	10200	${ m mg/Kg}$	100	10000	615	96	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

		MSD			\mathbf{Spike}	Matrix		Rec.		RPD
Param	•	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		10500	mg/Kg	100	10000	615	99	85 - 115	3	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (CCV-1)

QC Batch: 73497

Date Analyzed: 2010-09-14

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	$\operatorname{Percent}$	Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	228	91	80 - 120	2010-09-14

Standard (CCV-2)

QC Batch: 73497

Date Analyzed: 2010-09-14

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	\mathbf{Date}
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	229	92	80 - 120	2010-09-14

Standard (CCV-3)

QC Batch: 73497

Date Analyzed: 2010-09-14

Analyzed By: kg

DRO		mg/Kg	250	224	90	80 - 120	2010-09-14
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
			True	Found	Percent	Recovery	Date
			CCVs	CCVs	CCVs	$\operatorname{Percent}$	

Standard (CCV-2)

QC Batch: 73583

Date Analyzed: 2010-09-15

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		${ m mg/Kg}$	1.00	1.19	119	80 - 120	2010-09-15

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 22 of 24 Lea Co., NM

Standard (CCV-3)

QC Batch: 73583

Date Analyzed: 2010-09-15

Analyzed By: AG

	-		CCVs True	${ m CCVs} \ { m Found}$	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.16	116	80 - 120	2010-09-15

Standard (CCV-2)

QC Batch: 73591

Date Analyzed: 2010-09-15

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.113	113	80 - 120	2010-09-15
Toluene		$_{ m mg/Kg}$	0.100	0.112	112	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.112	112	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.339	113	80 - 120	2010-09-15

Standard (CCV-3)

QC Batch: 73591

Date Analyzed: 2010-09-15

Analyzed By: AG

			$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.110	110	80 - 120	2010-09-15
Toluene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-15
Xylene		mg/Kg	0.300	0.331	110	80 - 120	2010-09-15

Standard (CCV-1)

QC Batch: 73620

Date Analyzed: 2010-09-16

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\text{GRO}}$		mg/Kg	1.00	1.13	113	80 - 120	2010-09-16

Standard (CCV-2)

QC Batch: 73620

Date Analyzed: 2010-09-16

Analyzed By: AG

Report Date: September 27, 2010 114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 23 of 24 Lea Co., NM

			$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\mathrm{G}}\mathrm{RO}$		mg/Kg	1.00	1.05	105	80 - 120	2010-09-16

Standard (CCV-1)

QC Batch: 73621

Date Analyzed: 2010-09-16

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-16
Toluene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-16
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-16
Xylene		mg/Kg	0.300	0.329	110	80 - 120	2010-09-16

Standard (CCV-2)

QC Batch: 73621

Date Analyzed: 2010-09-16

Analyzed By: AG

•			${ m CCVs} \ { m True}$	CCVs Found	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
$\overline{\mathrm{B}}_{\mathrm{enzene}}$		mg/Kg	0.100	0.108	108	80 - 120	2010-09-16
Toluene		${ m mg/Kg}$	0.100	0.107	107	80 - 120	2010-09-16
Ethylbenzene		mg/Kg	0.100	0.109	109	80 - 120	2010-09-16
Xylene		mg/Kg	0.300	0.323	108	80 - 120	2010-09-16

Standard (ICV-1)

QC Batch: 73697

Date Analyzed: 2010-09-21

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			\mathbf{True}	Found	Percent	Recovery	Date
Param	Flag	\mathbf{Units}	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-09-21

Standard (CCV-1)

QC Batch: 73697

 $Date\ Analyzed:\ \ 2010\text{-}09\text{-}21$

Analyzed By: AR

114-6400673

Work Order: 10091332 COG/Prohibition Fed. #2 SWD Page Number: 24 of 24

Lea Co., NM

			CCVs True	CCVs Found	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	· 85 - 115	2010-09-21

Standard (ICV-1)

QC Batch: 73782

Date Analyzed: 2010-09-23

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2010-09-23

Standard (CCV-1)

QC Batch: 73782

Date Analyzed: 2010-09-23

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	98.0	98	85 - 115	2010-09-23

Wo #: 10091332

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Certifications

WBENC: 237019 HUB: NCTRCA

1752439743100-86536 WFWB38444Y0909

DBE: VN 20657

NELAP Certifications

Lubbock: T104704219-08-TX

LELAP-02003 Kansas E-10317 El Paso:

T104704221-08-TX

LELAP-02002

Midland:

T104704392-08-TX

Analytical and Quality Control Report

Ike Tavarez

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

Report Date: April 5, 2011

Work Order: 11032922

Project Location: Lea Co., NM

Project Name:

COG/Prohibition Federal #2

Project Number:

114-6400673

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

			Date	${f Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
262038	SB-1 0-2'	soil	2011-03-24	00:00	2011-03-28
262039	SB-1 3'	soil	2011-03-24	00:00	2011-03-28
262040	SB-1 5'	soil	2011-03-24	00:00	2011-03-28
262041	SB-1 7'	soil	2011-03-24	00:00	2011-03-28
262042	SB-1 10'	soil	201:1-03-24	00:00	2011-03-28
262043	SB-1 15'	soil	2011-03-24	00:00	2011-03-28
262044	SB-1 20'	soil	2011-03-24	00:00	2011-03-28
262045	SB-1 25'	· soil	2011-03-24	00:00	2011-03-28
262046	SB-1 30'	soil	2011-03-24	00:00	2011-03-28
262047	SB-1 40'	soil	2011-03-24	00:00	2011-03-28

			Date	$_{ m Time}$	Date
Sample	Description	Matrix	Taken	Taken	Received
262048	SB-1 50'	soil	2011-03-24	00:00	2011-03-28
262049	SB-1 60'	soil	2011-03-24	00:00	2011-03-28
262050	SB-1 70'	soil	2011-03-24	00:00	2011-03-28
262051	SB-2 0-1'	soil	2011-03-24	00:00	2011-03-28
262052	SB-2 3'	soil	2011-03-24	00:00	2011-03-28
262053	SB-2 5°	soil	2011-03-24	00:00	2011-03-28
262054	SB-2 7'	soil	2011-03-24	00:00	2011-03-28
262055	SB-2 10'	soil	2011-03-24	00:00	2011-03-28
262056	SB-2 15'	soil	2011-03-24	00:00	2011-03-28
262057	SB-2 20'	soil	2011-03-24	00:00	2011-03-28
262058	SB-3 0-1'	soil	2011-03-24	00:00	2011-03-28
262059	SB-3 3'	soil	2011-03-24	00:00	2011-03-28
262060	SB-3 5'	soil	2011-03-24	00:00	2011-03-28
262061	SB-3 7'	soil	2011-03-24	00:00	2011-03-28
262062	SB-3 10'	soil	2011-03-24	00:00	2011-03-28
262063	SB-3 15'	soil	2011-03-24	00:00	2011-03-28
262064	SB-3 20'	soil .	2011-03-24	00:00	2011-03-28
262065	SB-4 0-1'	soil	2011-03-25	00:00	2011-03-28
262066	SB-4 3'	soil	2011-03-25	00:00	2011-03-28
262067	SB-4 5'	soil	2011-03-25	00:00	2011-03-28
262068	SB-4 7'	soil	2011-03-25	00:00	2011-03-28
262069	SB-4 10'	soil	2011-03-25	00:00	2011-03-28
262070	SB-4 15'	soil	2011-03-25	00:00	2011-03-28
262071	SB-4 20'	soil	2011-03-25	00:00	2011-03-28
262072	SB-5 0-1'	soil	2011-03-25	00:00	2011-03-28
262073	SB-5 3'	soil	2011-03-25	00:00	2011-03-28
262074	SB-5 5'	soil	2011-03-25	00:00	2011-03-28
262075	SB-5 7'	soil	2011-03-25	00:00	2011-03-28
262076	SB-5 10'	soil	2011-03-25	00:00	2011-03-28
262077	SB-5 15'	soil	2011-03-25	00:00	2011-03-28

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

This report consists of a total of 19 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc. \nearrow

Dr. Blair Leftwich, Director Dr. Michael Abel, Project Manager

Standard Flags

 ${\bf B}$ - The sample contains less than ten times the concentration found in the method blank.

Case Narrative

Samples for project COG/Prohibition Federal #2 were received by TraceAnalysis, Inc. on 2011-03-28 and assigned to work order 11032922. Samples for work order 11032922 were received intact at a temperature of 8.9 C.

Samples were analyzed for the following tests using their respective methods.

		Prep	Prep	$_{ m QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	67926	2011-04-04 at 12:38	80068	2011-04-05 at 10:43
Chloride (Titration)	SM 4500-Cl B	67926	2011-04-04 at 12:38	80069	2011-04-05 at 10:44
Chloride (Titration)	SM 4500-Cl B	67926	2011-04-04 at 12:38	80070	2011-04-05 at 10:45
Chloride (Titration)	SM 4500-Cl B	67926	2011-04-04 at 12:38	80071	2011-04-05 at 10:45

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 11032922 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: April 5, 2011 114-6400673

Work Order: 11032922 COG/Prohibition Federal #2 Page Number: 4 of 19 Lea Co., NM

Analytical Report

Sample: 262038 - SB-1 0-2'

Laboratory:

Midland

Chloride (Titration) Analysis:

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: 80068 Prep Batch: 67926 Date Analyzed: Sample Preparation:

2011-04-05 2011-04-04

ARAnalyzed By: Prepared By: AR

RL

4.00

AR.

RL

Parameter Flag Result Units Dilution 8290 Chloride mg/Kg

Sample: 262039 - SB-1 3'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 80068 Prep Batch: 67926 Analytical Method:

Sample Preparation:

Date Analyzed:

SM 4500-Cl B 2011-04-05

2011-04-04

Prep Method: N/AAnalyzed By: AR

Prepared By:

100

RL

Result Units Dilution RLParameter Flag Chloride 12200 mg/Kg 100 4.00

Sample: 262040 - SB-1 5'

Laboratory:

Prep Batch:

Midland

67926

Analysis: QC Batch: 80068

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2011 - 04 - 05

2011-04-04

N/A Prep Method: Analyzed By: ARPrepared By: AR

RL

Result Units Dilution RLParameter Flag Chloride 14400mg/Kg 100 4.00

Sample: 262041 - SB-1 7'

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 80068 67926 Prep Batch:

Analytical Method:

Date Analyzed: Sample Preparation: SM 4500-Cl B 2011-04-05

2011-04-04

Prep Method: N/A Analyzed By: AR Prepared By: AR

 $continued \dots$

Report Date: April 5, 2011 114-6400673

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sample	262041	continued			
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Parameter		Flag	RL Result	Units	Dilution	RL
			RL		50	
Parameter	*	Flag	Result	Units	Dilution	RL
Chloride			11700	mg/Kg	100	4.00

Sample: 262042 - SB-1 10'

Laboratory: N

Midland

Analysis: Chloride (Titration)
QC Batch: 80068
Prep Batch: 67926

Analytical Method: SM 4500-Cl B Date Analyzed: 2011-04-05 Sample Preparation: 2011-04-04

Prep Method: N/A
Analyzed By: AR
Prepared By: AR

Sample: 262043 - SB-1 15'

Laboratory:

Midland

Analysis: Chloride (Titration)
QC Batch: 80068
Prep Batch: 67926

Analytical Method: SM 4500-Cl B Date Analyzed: 2011-04-05 Sample Preparation: 2011-04-04

Prep Method: N/A Analyzed By: AR Prepared By: AR

Sample: 262044 - SB-1 20'

Laboratory:

Chloride

Midland

Analysis: Chloride (Titration) QC Batch: 80068 Prep Batch: 67926 Analytical Method: SM 4500-Cl B Date Analyzed: 2011-04-05 Sample Preparation: 2011-04-04

Units

mg/Kg

Prep Method· N/A Analyzed By: AR Prepared By: AR

Parameter Flag R

RL Result .

Dilution 100

 $\frac{RL}{4.00}$

Report Date 114-6400673	e: April 5, 2011	Work Order: 11032922 COG/Prohibition Federal #2		Page Number: Lea Ce	6 of 19 o., NM
Sample: 26	32045 - SB-1 25'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80068 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
2 101/ 2 00011	01020	•			
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride			mg/Kg	100	4.00
Sample: 26	32046 - SB-1 30'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80068 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride	r rag		mg/Kg	100	4.00
Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	2047 - SB-1 40' Midland Chloride (Titration) 80068 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter Chloride	Flag	Result 297 0	Units mg/Kg	Dilution 100	RL 4.00
Sample: 26	2048 - SB-1 50'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
		LIAMEN	O FIELDS		

Report Date 114-6400673	e: April 5, 2011	Work Order: 1103 COG/Prohibition Fe		Page Number: Lea Co	7 of 19 o., NM
Sample: 26	2049 - SB-1 60'			•	
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		251	mg/Kg	50	4.00
Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Chloride	Flag	RL Result 208	Units mg/Kg	Dilution 50	RL 4.00
Sample: 26	2051 - SB-2 0-1'	·			
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		3140	mg/Kg	100	4.00
Sample: 26 Laboratory:	2052 - SB-2 3' Midland	,			
Analysis: QC Batch: Prep Batch:	Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Chloride	Flag	RL Result 4580	Units mg/Kg	Dilution 100	RL 4.00

COG/Prohibition Federal #2 Lea Co., NM 114-6400673 Sample: 262053 - SB-2 5' Laboratory: Midland SM 4500-Cl B Prep Method: N/A Analytical Method: Analysis: Chloride (Titration) ARDate Analyzed: 2011-04-05 Analyzed By: QC Batch: 80069 Prepared By: AR. Prep Batch: 67926 Sample Preparation: 2011-04-04 RLParameter Result Units Dilution RLFlag 2970 mg/Kg 100 4.00 Chloride Sample: 262054 - SB-2 7' Midland Laboratory: SM 4500-Cl B Prep Method: Analytical Method: N/A Analysis: Chloride (Titration) Date Analyzed: 2011-04-05 Analyzed By: AR. QC Batch: 80069 Sample Preparation: 2011-04-04 Prepared By: AR Prep Batch: 67926 RLResult Units Dilution RLParameter Flag mg/Kg 50 4.00Chloride 208 Sample: 262055 - SB-2 10' Laboratory: Midland Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A Analysis: QC Batch: 80069 Date Analyzed: 2011-04-05 Analyzed By: ARPrep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RLDilution RLParameter Flag Result Units <200 4.00 Chloride mg/Kg 50 Sample: 262056 - SB-2 15' Laboratory: Midland Analytical Method: SM 4500-Cl B Prep Method: Analysis: Chloride (Titration) N/A 2011-04-05 QC Batch: 80069 Date Analyzed: Analyzed By: AR. Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR ·RL

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Parameter

Chloride

Flag

Result

<200

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Dilution

50

RL

4.00

Units

mg/Kg

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2057 - SB-2 20'				•
Midland Chloride (Titration) 80069 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
El.,	RL Damelt	T In. 14.	Dilution	RL
Flag			50	4.00
2058 - SB-3 0-1'				
Midland Chloride (Titration) 80070 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Flag	RL Result 2350	Units mg/Kg	Dilution 100	RL 4.00
2059 - SB-3 3' Midland Chloride (Titration)	${\bf Analytical\ Method:}$	SM 4500-Cl B	. Prep Method:	N/A
80070 67926	Date Analyzed: Sample Preparation:	2011-04-05 2011-04-04	Analyzed By: Prepared By:	AR AR
Flag	RL Result	Units	Dilution	RL
	612	mg/Kg	50	4.00
2060 - SB-3 5'				
Midland Chloride (Titration) 80070 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
	m RL			
	2057 - SB-2 20' Midland Chloride (Titration) 80069 67926 Flag 2058 - SB-3 0-1' Midland Chloride (Titration) 80070 67926 Flag 2059 - SB-3 3' Midland Chloride (Titration) 80070 67926 Flag 2060 - SB-3 5' Midland Chloride (Titration) 80070 67926	COG/Prohibition Fe	COG/Prohibition Federal #2	COG/Prohibition Federal #2 Lea Co 2057 - SB-2 20'

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Report Date: April 5, 2011 Lea Co., NM COG/Prohibition Federal #2 114-6400673 Sample: 262065 - SB-4 0-1' Laboratory: Midland SM 4500-Cl B Prep Method: Analysis: Chloride (Titration) Analytical Method: N/A Analyzed By: ARQC Batch: 80070 Date Analyzed: 2011-04-05 Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: ARRLParameter Flag Result Units Dilution RLChloride 314 mg/Kg 50 4.00 Sample: 262066 - SB-4 3' Midland Laboratory: Prep Method: N/A Chloride (Titration) Analytical Method: SM 4500-Cl B Analysis: 2011-04-05 Analyzed By: Date Analyzed: ARQC Batch: 80070 2011-04-04 Prepared By: AR Prep Batch: 67926 Sample Preparation: RLResult Dilution RLParameter Flag Units 2110 mg/Kg 100 4.00Chloride Sample: 262067 - SB-4 5' Midland Laboratory: Analytical Method: SM 4500-Cl B Prep Method: N/A Analysis: Chloride (Titration) QC Batch: 80070 Date Analyzed: 2011-04-05 Analyzed By: AR. Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: ARRLDilution RLParameter Flag Result Units 4520 100 4.00 Chloride mg/Kg Sample: 262068 - SB-4 7' Laboratory: Midland Analytical Method: SM 4500-Cl B Prep Method: Analysis: Chloride (Titration) N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Sample Preparation: 2011-04-04 Prep Batch: 67926 Prepared By: ARRLFlag Parameter Result Units Dilution RL

<200

nig/Kg

50

4.00

Chloride

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Report Date 114-6400673	e: April 5, 2011	Work Order: 1103 COG/Prohibition Fed		Page Number: 1 Lea C	2 of 19 o., NM
Sample: 26	22069 - SB-4 10'			-	
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80071 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution _.	RL
Chloride		<200	mg/Kg	50.	4.00
Sample: 26	2070 - SB-4 15'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80071 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Chloride	Flag	RL Result 379	Units mg/Kg	Dilution 50	RL 4.00
Sample: 26	2071 - SB-4 20'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80071 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	- Flag	RL Result	Units .	Dilution	$_{ m RL}$
Chloride		<200	mg/Kg	50	4.00
Sample: 26	2072 - SB-5 0-1'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 80071 67926	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-C1 B 2011-04-05 2011-04-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Chloride	Flag	RL Result 3150	Units mg/Kg	Dilution 100	RL 4.00

QC Batch 80071 Date Analyzed 2011-04-05 Analyzed By: AR Prep Batch 67926 Sample Preparation: 2011-04-04 Prepared By: AR Prepared By: AR Prepared By: AR Prepared By: AR Braineter Flag Result Units Dilution RL Chloride Chloride	Report Date: April 5, 2011 114-6400673			Work Order: 11032922 COG/Prohibition Federal #2		3 of 19 o., NM
Analysis: Chloride (Titration)	Sample: 26	62073 - SB-5 3'				
Parameter	Analysis: QC Batch.	Chloride (Titration) 80071	Date Analyzed:	2011-04-05	Analyzed By:	
Chloride	_	T)		## ** *	D2	D.F
Sample: 262074 - SB-5 5'		Flag				
Laboratory: Midland						
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B 2011-04-05 Prep Method: N/A Analyzed By: AR Analyzed By: AR Analyzed By: ANALY Analyzed By: ANALY Analyzed By: ANALY Analyzed By: ANALY Analyzed By: AR Analyzed By: </td <td>Sample: 26</td> <td>62074 - SB-5 5'</td> <td></td> <td></td> <td></td> <td></td>	Sample: 26	62074 - SB-5 5'				
Parameter Flag Result Units Dilution RL Chloride 1360 mg/Kg 100 4.00 Sample: 262075 - SB-5 7' Laboratory: Midland Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Result Units Dilution RL Chloride < 200	Analysis: QC Batch:	Chloride (Titration) 80071	Date Analyzed:	2011-04-05	Analyzed By:	AR
Chloride 1360 mg/Kg 100 4.00 Sample: 262075 - SB-5 7' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Result Units Dilution RL Chloride <200	Parameter	Flag		Units	Dilution	RL
Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Result Units Dilution RL Chloride Sample: 262076 - SB-5 10' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL R R R R R Dilution R R Parameter Flag Result Units Dilution R R	Chloride		1360	mg/Kg	100	4.00
Analysis: Chloride (Titration) QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Parameter Flag Result Units Dilution RL Chloride <200 mg/Kg 50 4.00 Sample: 262076 - SB-5 10' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Analyzed By: AR Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-05 Analyzed By: AR RL Parameter Flag Result Units Dilution RL	Sample: 26	62075 - SB-5 7'				
Parameter Flag Result Units Dilution RL Chloride Chloride Result Units Dilution RL Midland Analysis: Chloride (Titration) QC Batch: 80071 Prep Batch: 67926 RL RL Rameter Flag Result Units Dilution RL Online Onlin	Analysis: QC Batch:	Chloride (Titration) 80071	Date Analyzed:	2011-04-05	Analyzed By:	AR
Chloride < 200 mg/Kg 50 4.00 Sample: 262076 - SB-5 10' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Parameter Flag Result Units Dilution RL			RL			
Sample: 262076 - SB-5 10' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Parameter Flag Result Units Dilution RL		Flag				
Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Parameter Flag Result Units Dilution RL	Chloride		<200	шу ку	30	4.00
Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B QC Batch: 80071 Prep Batch: 67926 Batch: RL Parameter Flag Analytical Method: SM 4500-Cl B Prep Method: N/A 2011-04-05 Analyzed By: AR Prepared By: AR RL RL Parameter Flag Result Units Dilution RL	Sample: 26	2076 - SB-5 10'				
QC Batch: 80071 Date Analyzed: 2011-04-05 Analyzed By: AR Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR RL Parameter Flag Result Units Dilution RL	•			~		
Prep Batch: 67926 Sample Preparation: 2011-04-04 Prepared By: AR $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$						
Parameter Flag Result Units Dilution RL					· ·	
	D .	773		TT *:	D.1. (1)	T- T
	Parameter Chloride	Flag		ng/Kg	Dilution 50	$\frac{\mathrm{RL}}{4.00}$

Report Date: April 5, 2011

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Lea Co., NM

Sample: 262077 - SB-5 15'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 80071 Prep Batch: 67926

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2011-04-05

2011-04-04

Prep Method: N/A Analyzed By: AR. Prepared By: AR

RL

Parameter Flag Result Units Dilution RLChloride <200 mg/Kg 50 4.00

Method Blank (1)

QC Batch: 80068

QC Batch: 80068 Prep Batch: 67926

Date Analyzed: 2011-04-05 QC Preparation: 2011-04-04 Analyzed By: AR

Prepared By: AR

MDL RLFlag Result Units Parameter 4 Chloride < 3.85 mg/Kg

Method Blank (1)

QC Batch: 80069

QC Batch: 80069 Prep Batch: 67926 Date Analyzed: 2011-04-05 QC Preparation: 2011-04-04

Analyzed By: AR Prepared By: AR.

MDL Units RLResult Parameter Flag Chloride <3.85 mg/Kg $\overline{4}$

Method Blank (1)

QC Batch: 80070

QC Batch: 80070 Prep Batch: 67926 Date Analyzed: QC Preparation:

2011-04-05 2011-04-04

Analyzed By: ARPrepared By: AR

MDL

Units RLParameter Flag Result Chloride < 3.85 mg/Kg 4

Report Date: April 5, 2011

114-6400673

Work Order: 11032922 COG/Prohibition Federal #2 Page Number: 15 of 19

Lea Co., NM

Method Blank (1)

QC Batch: 80071

QC Batch: Prep Batch: 67926

80071

Date Analyzed: 2011-04-05 QC Preparation: 2011-04-04 Analyzed By: AR

Prepared By: AR.

MDL

		1,125 25		
Parameter	Flag	Result	Units	RL
Chloride		< 3.85	nig/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2011-04-05

Analyzed By: AR

Prep Batch: 67926

QC Preparation: 2011-04-04

Prepared By: AR

	LCS			Spike	Matrix	•	Rec.
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	$_{ m Limit}$
Chloride .	97.2	mg/Kg	1	100	< 3.85	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit	RPD	Limit
Chloride	102	mg/Kg	1	100	< 3.85	102	85 - 115	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 67926

80069

Date Analyzed:

2011-04-05

Analyzed By: AR

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	95.9	mg/Kg	1	100	< 3.85	96	85 - 115

QC Preparation: 2011-04-04

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD	•		Spike	Matrix		Rec.		RPD
Paranı	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	104	nıg/Kg	1	100	< 3.85	104	85 - 115	8	20

QC Preparation: 2011-04-04

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 67926

80070

Date Analyzed:

2011-04-05

Analyzed By: AR Prepared By: AR Report Date: April 5, 2011 114-6400673

Work Order: 11032922 COG/Prohibition Federal #2 Page Number: 16 of 19 Lea Co., NM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	${f Amount}$	Result	Rec.	Limit
Chloride	95.7	mg/Kg	1	100	< 3.85	96	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			$_{ m Spike}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	104	mg/Kg	1	100	< 3.85	104	85 - 115	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Laboratory Control Spike (LCS-1)

QC Batch: 80071

71 Date Analyzed:

2011-04-05

Analyzed By: AR

Prep Batch: 6

67926

QC Preparation: 2011-04-04

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	96.6	mg/Kg	1	100	< 3.85	97	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	, Limit
Chloride	103	mg/Kg	1	100	< 3.85	103	85 - 115	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 262047

QC Batch: 80068 Prep Batch: 67926

0068

Date Analyzed: 20 QC Preparation: 20

2011-04-05 2011-04-04 Analyzed By: AR Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	12200	mg/Kg	100	10000	2970	92	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		R.PD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	13000	mg/Kg	100	10000	2970	100	80 - 120	6	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 262057

QC Batch: 80069 Prep Batch: 67926 Date Analyzed: 2011-04-05 QC Preparation: 2011-04-04

Analyzed By: AR Prepared By: AR Report Date: April 5, 2011

114-6400673

Work Order: 11032922 COG/Prohibition Federal #2 Page Number: 17 of 19 Lea Co., NM

Param	MS Result Units		Units	Dil.	Spike Amount		trix sult	Rec.	Rec. Limit
Chloride	103	00 m	ıg/Kg	100	10000	<:	385	103	80 - 120
Percent recovery is based of	-	RPD is ba	ased on	-		plicate 1			מממ
·	MSD			Spike	Matrix		Rec.	DDD	RPD
Param Chloride	-	RPD is be	ased on Dil.	-		plicate 1 Rec.		RPD	RPD Limit

Matrix Spike (MS-1) Spiked Sample: 262067

QC Batch: Prep Batch: 67926

80070

Date Analyzed:

2011-04-05 QC Preparation: 2011-04-04 Analyzed By: AR

Prepared By: AR

		MS			Spike	Matrix		Rec.
Param	•	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride		 14600	nig/Kg	100	10000	4520	101	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	15300	mg/Kg	100	10000	4520	108	80 - 120	5	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Matrix Spike (MS-1) Spiked Sample: 262077

QC Batch:

80071

Date Analyzed:

2011-04-05

Analyzed By: AR

Prep Batch: 67926

QC Preparation: 2011-04-04

Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride	10100	mg/Kg	100	10000	<385	101	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	10300	mg/Kg	100	10000	<385	103	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Standard (ICV-1)

QC Batch: 80068

Date Analyzed: 2011-04-05

Analyzed By: AR

Page Number: 18 of 19 Report Date: April 5, 2011 Work Order: 11032922 114-6400673 COG/Prohibition Federal #2 Lea Co., NM **ICVs** ICVsICVsPercent True Found Percent Recovery Date Param Flag Units Conc. Conc. Recovery Limits Analyzed Chloride 100 106 106 85 - 115 2011-04-05 mg/Kg Standard (CCV-1) QC Batch: 80068 Date Analyzed: 2011-04-05 Analyzed By: AR. **CCVs CCVs CCVs** Percent True Found Percent Recovery Date Flag Param Units Conc. Conc. Recovery Limits Analyzed Chloride 100 94.4 94 85 - 115 2011-04-05 mg/Kg Standard (ICV-1) QC Batch: 80069 Date Analyzed: 2011-04-05 Analyzed By: AR **ICVs ICVs ICVs** Percent True Found Percent Recovery Date Units Analyzed Param Flag Conc. Conc. Recovery Limits Chloride mg/Kg 100 97.9 85 - 115 2011-04-05 98 Standard (CCV-1) QC Batch: 80069 Date Analyzed: 2011-04-05 Analyzed By: AR CCVs**CCVs** CCVs . Percent True Found Percent Recovery Date Param Flag Units Conc. Conc. Recovery Limits Analyzed

Standard (ICV-1)

Chloride

QC Batch: 80070 Date Analyzed: 2011-04-05

mg/Kg

Analyzed By: AR

85 - 115

2011-04-05

			ICVs	ICVs	ICVs	Percent	
		•	True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	98.5	98	85 - 115	2011-04-05

102

100

102

Standard (CCV-1)

QC Batch: 80070 Date Analyzed: 2011-04-05 Analyzed By: AR

Report Date: April 5, 2011

114-6400673

Work Order: 11032922 COG/Prohibition Federal #2 Page Number: 19 of 19

Lea Co., NM

			CCVs True	$\begin{array}{c} { m CCVs} \\ { m Found} \end{array}$	$\begin{array}{c} { m CCVs} \\ { m Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2011-04-05

Standard (ICV-1)

QC Batch: 80071

Date Analyzed: 2011-04-05

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2011-04-05

Standard (CCV-1)

QC Batch: 80071

Date Analyzed: 2011-04-05

Analyzed By: AR.

			CCVs	CCVs	CCVs	Percent	•
•			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride ·		mg/Kg	100	99.0	99	85 - 115	2011-04-05

Analysis Request of Chain of Custody Record TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (A2) 882-3946 CUENT NAME COG PROJECT NO.: 114-6-1006-73					¥	_	ľ	04.110	32922							_															
TETRATECH 1910 N. Big Spring St. Midland, Texas 78705 M32) 682-5659 + Fax (432) 682-569 + Fax (432) 682	An	a	vs	is F	le	a	u	est of Ch	ain of Cus	tody	Re	3 C	0	ro		L								_				0	F:	4	
Midland, Toxas 79705 (43) 682-4599 Fox (43) 682-3946 CLIENT NAME: COG: TIRE Toxas 4 Method TIRE Toxas 5 M																1				(.}			
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<u>×ルッ3292</u> Analysis Request of Chain of Custody Record OF: PAGE: **ANALYSIS REQUEST** (Circle or Specify Method No.) TETRA TECH (Ext. to C35) 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946 CLIENT NAME: SITE MANAGER: LICE PRESERVATIVE COG Taxaet METHOD PROJECT NAME, OG / Pro hi bitton Federal #2 PROJECT NO .: 114-6400673 Lau Co., MM LAB I.D. DATE TIME SAMPLE IDENTIFICATION NONE HNO3 NUMBER 벌 2011 13/24 SB-3 3'

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Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

* Wb#: 16329A2

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