Bratcher, Mike, EMNRD

From:	Joshua Russo [jrusso@conchoresources.com]
Sent:	Wednesday, March 02, 2011 8:21 AM
То:	Bratcher, Mike, EMNRD
Cc:	Pat Ellis
Subject:	Houma State #1 TB - Immediate Notification

Mr. Bratcher,

Please see below the detailed description of a release that occurred at the Houma State #1 TB on 03/01/2011.

On 3-1-11 at 10:50 the produced water tank ran over at the Houma St. #1 Tank Battery. The spill was caused by a transfer pump malfunction compounded by an alarm system failure. 70 barrels of produced water was released into the unlined dike. 68 barrels of produced water were recovered. All standing fluids were recovered and contaminated soil will be disposed.

GPS coordinates, legal description, and driving directions below:

N 32* 50.130 W 103* 58.671

Houma St. #1 2310' FNL & 2310' FWL Sec.16-T17S-R30E Eddy County

North of Loco Hills on Goat Ropers Rd. 1.22 miles to Houma battery on West.

Joshua Russo

HSE Coordinator 550 W. Texas Ave, Suite 100 Midland, Texas 79701 Phone: (432) 683-7443 Cell: (432) 212-2399 irusso@conchoresources.com



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SITE INFORMATION

Report Type: Closure Report

		Repor	t Type: Clos	ге нероп	
General Site In	formation:				a contraction
Site:		Houma Sta	te #1		
Company:		COG Opera	ting LLC		
Section, Towns	ship and Range	Sec 16	T17S	R30E	
Lease Number		API-30-015-	31491		
County:		Eddy Coun	ty		
GPS:			32.83561° N		103.97778° W
Surface Owner	*	State		· · · · · · · · · · · · · · · · · · ·	
Mineral Owner	•				
Directions:		In Loco Hills, Rd. for 1.2 m	from the intersection iles, turn left and trav	of Hwy 82 and Goat Ro I 0.4 miles, turn left an	oaper Rd. travel north on Goat Roapend travel to site.
Release Data:			ne ling and a second a second and a second a se		e i na ser a s
Date Released:		3/1/2011		· · · · · · · · · · · · · · · · · · ·	
Type Release:		Produced W	ater		
Source of Conta	amination:	Water Tank			
Fluid Released:	·	70 bbls	• ····		
Fluids Recovere	ed:	68 bbls			
Official Comm	unication:			Shanner e	
Name:	Pat Ellis			lke Tavare	9Z
Company:	COG Operating	10		Tetra Tech	h
Addresse		- 01- 1000			ia Carian
Address:	550 W. Texas Av	e. Ste. 1300		1910 N. B	
Р.О. Вох					
City:	Midland Texas, 79	9701		Midland, T	lexas
Phone number:	(432) 686-3023			432-628-4	1559
Fax:	(432) 684-7137				
Email:	pellis@conchores	ources.com		ike tavare	ez@tetratech.com
Ranking Criter	ia				
Depth to Ground	dwater:		Ranking Score		Site Data
<50 ft			20		
50-99 ft			10		
>100 ft.			0	· · · · · · · · · · · · · · · · · · ·	0
				• •• •• • • •	
WellHead Protect			Ranking Score		Site Data
vvater Source <1	1,000 ft., Private <200	<u>π.</u>	20	·······	
vvaler Source >1	,000 ii., Private >200	/ IL.	0		U
Surface Body of	Water:		Ranking Score		Site Data
<200 ft.			20		
200 ft - 1,000 ft.			10		
>1,000 ft.			0		0
	otal Ranking Scor	9	0		RECEIVED
		Accept	able Soil RRAL (n	g/kg)	OCT 11 2011
		Benzene	Total BTEX	ТРН	ULIII
		10	50	5,000	ARTE
					NMOOD



August 31, 2011

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

Re: Assessment and Closure Request for the COG Operating LLC., Houma State #1 Tank Battery, Unit J, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the Houma State #1 Tank Battery located in Unit J, Section 16, Township 17 South, Range 30 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83561°, W 103.97778°. 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 March 3, 2011, and released approximately seventy (70) barrels of produced fluid from a water tank. To alleviate the problem, COG personnel repaired the transfer pump connected to the water tank. Sixty Eight (68) barrels of standing fluids were recovered. The spill initiated and remained inside the facility firewalls and measured approximately 10' x 100'. The initial C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 16. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 300' below surface. The average depth to groundwater map is shown in Appendix B.



Regulatory

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

Soil Assessment and Analytical Results

On March 24, 2011, Tetra Tech personnel inspected and sampled the spill area. Three (3) auger holes (AH-1 and AH-3) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The auger hole locations are shown on Figure 3.

Referring to Table 1, AH-1, AH-2 and AH-3 samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected at 0-1' in all auger holes with concentrations of 4,330 mg/kg, 1,870 mg/kg and 2,380 mg/kg, respectively. However, the deeper samples at 1-1.5' significantly declined with depth. As a result, the spill impact was shallow and vertically defined.

Work Plan

Based on the limited extent of chloride impact (0-1') and depth to groundwater (>300'), COG request closure of the site. COG proposes to perform some general house keeping in the areas of the auger holes to remove the surface chloride impact. The final C-141 is enclosed in Appendix A.



If you have any questions or comments concerning the assessment performed at the site, please call me at (432) 682-4559.

Respectfully submitted,

TETRA, TECH Ike Tavare Tetra Tech

Tella Tell

cc: Pat Ellis - COG

FIGURES





Drawn By: Isabel Marmolejo



СНАЯВОТОНЯ

COG Operating LLC Houma State #1 Eddy County, New Mexico



View North – AH-3, 2, 1



View South – AH-1, 2, 3

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TABLES

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Table 1 COG Operating LLC. HOUMA STATE #1 TANK BATTERY Eddy County, New Mexico

Sample	Sample Data	Sample	Soil	Status	TI	TPH (mg/kg) Benzene Tol		ne Toluene Ethlybenzene	Ethlybenzene	Xylene	Chloride	
ID	Sample Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	3/24/2011	0-1'	Х		39.2	280	319.2	<0.0200	0.172	<0.0200	0.552	4,330
	11	1-1.5'	Х		-	_	-	-	-	_	-	255
	"	2-2.5'	Х		-	-	-	-	-	-	-	398
	И	3-3.5'	Х		-	-	-	-	-	_	-	416
	11	4-4.5'	Х		-	-	-	_	-		-	326
AH-2	3/24/2011	0-1'	X		384	590	974	0.447	1.05	0.974	5.17	1,870
	a	1-1.5'	Х		-	-	-	-	-	-	-	208
	II	2-2.5'	Х		•	-	-	-	-	_	-	<200
	H	3-3.5'	Х		-	-	-	_	-	-	-	<200
	11	4-4.5'	Х		-	-	-	-	-	_	-	<200
	11	5-5.5'	Х		-	-	-	-	-	-	-	460
	ŧI	6-6.5'	X		-	-	-	_	-	-	-	489
	u	7-7.5'	Х		-	-	-	-	-	_	-	<200
	11	8-8.5'	Х		-	-	-		-	•	_	<200
		•									l	

Table 1COG Operating LLC.HOUMA STATE #1 TANK BATTERYEddy County, New Mexico

Sample Samp	Sample Date	Sample	Soil	Status	TPH (mg/kg)			Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ID		Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	3/24/2011	0-1'	Х		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	2,380
	LI .	1-1.5'	Х		-	-	-	-	-	-	-	<200
	11	2-2.5'	Х		-	-	-	-	-		-	<200
	11	3-3.5'	Х		-	-	-	-	-	•	-	<200
	8)	4-4.5'	Х		-	-	-	-	-	-	-	<200
	11	5-5.5'	Х		_	-	-	-	-	-	-	<200
	11	6-6.5'	Х		-	-	-	-	-	_	-	<200
	lt	7-7.5'	Х		-	-	-	-	-	-	-	<200
	n	8-8.5'	Х		-	_	-	-	-	-		267
	Ħ	9-9.5'	Х		-	-	-	-	-	-	-	271

(--) Not Analyzed

APPENDIX A

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State of New Mexico Energy Minerals and Natural Resources

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

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

1220 0: 02 1 181		11 C, 14W 0750.	, 	Sa	inta Fe	e, NM 875	05				5140 07 1011
			Rel	ease Notific	ation	and Co	orrective A	ction			
						OPERA	FOR		M Initia	al Report	Final Report
Name of Co	mpany	COG OP	ERATIN	GLLC		Contact	Pa	at Ellis			
Address	550 W.	Texas, Suite	= 100, Mi	dland, TX 7970	1	Telephone 1	No. 432-2	230-00	77		
Facility Nar	ne	Houm	na State #	1]	Facility Typ	e Tanl	C Batter	ry		
Surface Ow	ner State			Mineral (humer				I ease N		30-015-31491
Buildee o m				- Minicial C					Deuser	(2.2.2.2.7)	30 013 31.01
	·	<u>(</u>	r	LOCA	TION	OF REJ	LEASE				
Unit Letter J	Section 16	Township 17S	Range 30E	Feet from the	North/	South Line	Feet from the	East/V	Vest Line	County E	ddy
	L	I	I	Latitude 32 :	50.130	Longitu	ude 103 58.671			,,,,_,_,_,_,	
				NAT	URE	OF REL	EASE				
Type of Relea	ase Produc	ed water				Volume of	Release 70bbls		Volume R	ecovered 6	Bbbls
Source of Rel	lease Wate	er tank				Date and H	lour of Occurrenc	e	Date and	Hour of Disc	overy
Was Immedia	te Notice (liven?				15/01/2011	Whom?		03/01/201	1 10:50 a.i	<u>n.</u>
The maneur			Yes 🗌	No 🗌 Not R	equired			Mike B	ratcher—O	CD	$\langle n \rangle$
By Whom?	Josh Russ	50				Date and H	Iour 03/02/2011	9:21	a.m.		THEY !!
Was a Water	course Read	hed?				If YES, Vo	olume Impacting t	he Wate	ercourse.	C	Et out
			Yes 🖂	No					5	AEU	12011 -10
If a Watercou	irse was Im	pacted, Descr	ibe Fully.'	k						1 00	ARTESIA
Describe Cau	se of Proble	em and Reme	dial Actio	n Taken.*							CD
The transfer p alarm system	oump malfu has been re	inctioned at the paired.	e battery a	and the high level	alarm w	as never set (off. The transfer p	oump ha	ıs been fixe	d and range	ed to service, the
Describe Are	a Affected a	and Cleanup A	Action Tal	cen.*				•		- <u></u>	
Initially 70bb contained inst any possible of work.	ls of produc ide the bern contaminati	ced water was n walls of the on from the re	released facility. elease and	from the water tar Fhe spill area mea we will present a	ik and we sured 5' remedia	e were able t x 140' withi tion work pla	o recover 68bbls war of the facility. Tet an to the NMOCE	with a va ra Tech) for app	acuum truc will sampl proval prior	k. The entire e the spill sit to any signi	e release was e area to delineate ficant remediation
I hereby certi regulations al public health should their o or the environ federal, state,	fy that the i l operators or the envir operations h ument. In a or local law	nformation gi are required to conment. The ave failed to a ddition, NMC vs and/or regu	ven above o report an acceptance dequately CD accep lations.	e is true and comp td/or file certain r ce of a C-141 reporting investigate and r tance of a C-141	lete to th elease no ort by the emediate report do	te best of my ptifications and NMOCD me contaminations not reliev	knowledge and u nd perform correc arked as "Final Re on that pose a thre e the operator of r	nderstar tive act eport" d eat to gr responsi	nd that purs ions for rele oes not reli ound water bility for co	evant to NMC eases which eve the oper surface wa compliance w	DCD rules and nay endanger ator of liability ter, human health ith any other
		<u></u>					OIL CONS	SERV	ATION	DIVISIO	N
Signature:		~~	ί.	2							•
Printed Name		Josh	Russo	\subseteq	4	Approved by	District Supervise	or:			
Title:		HSE Co	ordinator		A	Approval Dat	e:]]	Expiration	Date:	
E-mail Addres	<u>ss:</u>	jrusso@conc	horesourc	es.com	C	Conditions of	Approval:			Attached	
Date: /	02/07/2011	Dha		212 2200						Anached	
Attach Addit	ional Shee	ets If Necessi	. 432- arv	212+2399	I					I	

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State of New Mexico Energy Minerals and Natural Resources

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

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

Release Notification and Corrective Action OPERATOR Initial Report \square **Final Report** Name of Company COG Operating LLC Contact Pat Ellis Address 550 W. Texas, Suite 1300 Midland, Texas 79701 Telephone No. (432) 685-4332 Facility Type Tank Battery Facility Name Houma State #1 Surface Owner: State Mineral Owner Lease No. (API#) 30-015-31491 LOCATION OF RELEASE Feet from the North/South Line Feet from the Unit Letter Section Township Range East/West Line County 17S 30E J 16 Latitude N 32.83561° Longitude W 103.97778 NATURE OF RELEASE Type of Release: Produced Water Volume of Release 70 bbls Volume Recovered 68 bbls Source of Release: Water Tank Date and Hour of Occurrence Date and Hour of Discovery 3/1/2011 3/1/2011 10:50 a.m. If YES, To Whom? Was Immediate Notice Given? RECEIVED OCT 11 2011 DOCT 11 2011 Yes No Not Required Mike Bratcher - NMOCD Date and Hour 3/1/2011 By Whom? Josh Russo 9:21 a.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. Yes No N/A If a Watercourse was Impacted, Describe Fully.* N/A Describe Cause of Problem and Remedial Action Taken.* The transfer pump malfunctioned at the Tank Battery and the high level alarm was never set off. The transfer pump has been fixed and returned to service, the alarm system has been repaired. Describe Area Affected and Cleanup Action Taken.* Tetra Tech inspected site and collected samples to define the spills extent. Based on the assessment, COG will perform some general house keeping in the spill areas of auger holes to remove the surface chloride impacted soil. Tetra Tech prepared closure report and submitted to NMOCD for review and approval. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local-laws and/or regulations. OIL CONSERVATION DIVISION Signature: 006 Approved by District Supervisor: Printed Name: Ike Tavarez Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Attached Date: Phone: (432) 682-4559 Attach Additional Sheets If Necessary

APPENDIX B

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Water Well Data Average Depth to Groundwater (ft) COG - Houma State #1 Eddy County, New Mexico

	16 S	outh	2	9 East				16 9	South	3	0 East				16 5	South	3	East
6	5	4	3	2	1	6	5 5	5	4	3	2	1		6	5	4	3	2
7	8	9	10	11	12	7	·	3	9	10	11	12		7	8	9	10	11
18	17	16	15	14	13	1	8 1	17	16	15	14	13		18	17	16	15	14
19	20	21	22	23	24	1	9 2	20	21	22	23	24		19	20	21	22	23
30	29	28	27	26	25	3	30 2	29	28	27	26	25		30	29	28	27	26
31	32	33	34	35	36	3	11 S	32	33	34	35	36		31 290	32	33	34	35
	17 Se	outh	2	29 East	-			17 5	South	3	0 East		-		17 5	outh	31	East
6	5	4	3	2	1	6	5 5	5	4	3	2	1		6	5	4	3	2
7	8	9	10	11	12	7	· E	3	9	10	11	12		7	8	9	10	11
18	17	16	15	14	13	ī	8 1	17	16 SITE	15	14	13		18	17	16	15	14
19	20	21	22	23	24	1	9 2	20	21	22	23	24		19	20	21	22	23
30	29 210	28	27	26	25	3	10 2	29	28	27	26	25		30	29	28	27	26
31	32	33	34	35 153	36	3	51 3	32	33	34	35	36		31	32	33	34 271	35
·	18 Se	outh		9 Fast			h-	18 9	South	3	0 East		•		18 5	outh	31	East
6	5	4	3	2	1	6	5 E	5	4	3	2	1		6	5	4	3	2
7	8	9	10	11	12	7		3	9	10	11	12		7	8	9	10	11
18	17	16	15	14	13	1	8 1	17	16	15	14	13		18	17	16	15	14
19	20	21	22	23	24	1	9 2	20	21	22	23	24		19	20	21	22	23
30	29	28	27	26	25	3	10 2	29	28	27	26	25		30	29	28	27	26
31	32	33	34	35	36	3	51 3	32	33	34	35	36		31	32	33	34	35

201 1927 1920

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

MOCD - Groundwater Data

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APPENDIX C

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Summary Report

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

Report Date:	April	4,	2011	
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Work Order:	11032824

Project Location:	Eddy Co, NM
Project Name:	COG/Houma State #1 TB
Project Number:	114-6400856

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
261925	AH-1 0-1'	soil	2011-03-24	00:00	2011-03-28
261926	AH-1 1-1.5'	soil	2011-03-24	00:00	2011-03-28
261927	AH-1 2-2.5'	soil	2011-03-24	00:00	2011-03-28
261928	AH-1 3-3.5'	soil	2011-03-24	00:00	2011-03-28
261929	AH-1 4-4.5'	soil	2011-03-24	00:00	2011-03-28
261930	AH-2 0-1'	soil	2011-03-24	00:00	2011-03-28
261931	AH-2 1-1.5'	soil	2011-03-24	00:00	2011-03-28
261932	AH-2 2-2.5'	soil	2011-03-24	00:00	2011-03-28
261933	AH-2 3-3.5'	soil	2011-03-24	00:00	2011-03-28
261934	AH-2 4-4.5'	soil	2011 - 03 - 24	00:00	2011-03-28
261935	AH-2 5-5.5'	soil	2011-03-24	00:00	2011-03-28
261936	AH-2 6-6.5'	soil	2011-03-24	00:00	2011-03-28
261937	AH-2 7-7.5'	soil	2011-03-24	00:00	2011-03-28
261938	AH-2 8-8.5'	soil	2011-03-24	00:00	2011-03-28
261939	AH-3 0-1'	soil	2011-03-24	00:00	2011-03-28
261940	AH-3 1-1.5'	soil	2011-03-24	00:00	2011-03-28
261941	AH-3 2-2.5'	soil	2011-03-24	00:00	2011-03-28
261942	AH-3 3-3.5'	soil	2011-03-24	00:00	2011-03-28
261943	AH-3 4-4.5'	soil	2011-03-24	00:00	2011-03-28
261944	AH-3 5-5.5'	soil	2011-03-24	00:00	2011-03-28
261945	AH-3 6-6.5'	soil	2011-03-24	00:00	2011-03-28
261946	AH-3 7-7.5'	soil	2011 - 03 - 24	00:00	2011-03-28
261947	AH-3 8-8.5'	soil	2011-03-24	00:00	2011-03-28
261948	AH-3 9-9.5'	soil	2011-03-24	00:00	2011-03-28

Report Date: April 4, 2011

Work Order: 11032824

Page Number: 2 of 5

continued ...

		F	RTEX		TPH DRO - NEW	TPH GBC
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(ing/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
261925 - AH-1 0-1'	< 0.0200	0.172	<0.0200	0.552	280	39.2
261930 - AH-2 0-1'	0.447	1.05	0.974	5.17	590	384
261939 - AH-3 0-1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<2.00
Sample, 261025 AF	I 1 0 1					
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	F1 0-1				TT •.	DI
Param	Flag		Result			
			4330		mg/Kg	4.00
Sample: 261926 - AH	I-1 1-1.5'					
Param	Flag	· · · ·	Result		Units	RI
Chloride			255		mg/Kg	4.00
Sample: 261927 - AE	I-1 2-2.5'					
Param	Flag		Result		Units	RI
Chloride			398		mg/Kg	4.00
Sample: 261928 - AF	I-1 3-3.5'					
Param	Flag		Result		Units	RL
Chloride			416	·····	mg/Kg	4.00
	* * * * * *					
Sample: 261929 - AH -	1-1 4-4.5					
Param	Flag		Result		Units	RI
Unloride			326		mg/Kg	4.00
Sample: 261930 - AH	[-2 0-1'					
	Flor		Result		Units	RL
Param	riag					

Report Date: April 4, 2011		Work Order: 11032824	Page	Page Number: 3 of 5		
sample 261931 con	tinued					
Param	. Flag	Result	Units	RL		
Param	Flag	Result	Units	RL		
Chloride		208	mg/Kg	4.00		
Sample: 261932 -	- AH-2 2-2.5'					
Param	Flag	Result	Units	RL		
Chloride		<200	mg/Kg	4.00		
Sample: 261933	- AH-2 3-3.5'					
Param	Flag	Result	Units	RL		
Chloride		<200	mg/Kg	4.00		
Sample: 261934	- AH-2 4-4.5'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		<200	mg/Kg	4.00		
Sample: 261935	- AH-2 5-5.5'					
Param	Flag	Result	Units	RL		
Chloride		460	mg/Kg	4.00		
Sample: 261936 -	- AH-2 6-6.5'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		489	mg/Kg	4.00		
Sample: 261937 -	- AH-2 7-7.5'					
Param	Flag	Result	Units	RL		

Sample: 261938 - AH-2 8-8.5'

Report Date: April 4, 2011		Work Order: 11032824	Page	Number: 4 of 5
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
· · · ·				
Sample: 261939	- AH-3 0-1'			
Param	Flag	Result	Units	RL
Chloride		2380	mg/Kg	4.00
Sample: 261940	- AH-3 1-1.5'			
Paran	nelA	Besult	Unite	RI.
Chloride	T. 10k	<200	mg/Kg	4.00
<u></u>				
Sample: 261941	- AH-3 2-2.5'			
Param	Flag	Result	Units	RL
Chloride		. <200	mg/Kg	4.00
Sample: 261942 -	- AH-3 3-3.5'			
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 261943	- AH-3 4-4.5'			
Param	Flag	Result	Units	RL
Chloride		<200	ıng/Kg	4.00
Sample: 261944	- AH-3 5-5.5'			
Param	Flag	Result	Units	\mathbf{RL}
Chloride		<200	mg/Kg	4.00
Sample: 261945 ·	- AH-3 6-6.5'			
Param	Flag	Besult	Units	RL
Chloride	0	<200	mg/Kg	4.00

Report Date: April	I 4, 2011	Work Order: 11032824		Page Number: 5 of 5
Sample: 261946	- AH-3 7-7.5'			
Param	Flag	Result	Units	RL
Chloride	· · · · · · · · · · · · · · · · · · ·	<200	mg/Kg	4.00
Sample: 261947	- AH-3 8-8.5'			
Param	Flag	Result	Units	RL
Chloride		267	mg/Kg	4.00
Sample: 261948	- AH-3 9-9.5'			
Param	Flag	Result	Units	RL
Chloride		271	mg/Kg	4.00

.



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

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

Report Date: April 4, 2011

Work Order: 11032824

Project Location:Eddy Co, NMProject Name:COG/Houma State #1 TBProject Number:114-6400856

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

O I Durindia Multi Olim Dila	Received
Sample Description Matrix Taken Taken	TRECEIVEU
261925 AH-1 0-1' soil 2011-03-24 00:00	2011-03-28
261926 AH-1 1-1.5' soil 2011-03-24 00:00	2011-03-28
261927 AH-1 2-2.5' soil 2011-03-24 00:00	2011-03-28
261928 AH-1 3-3.5' soil 2011-03-24 00:00	2011-03-28
261929 AH-1 4-4.5' soil 2011-03-24 00:00	2011-03-28
261930 AH-2 0-1' soil 2011-03-24 00:00	2011-03-28
261931 AH-2 1-1.5' soil 2011-03-24 00:00	2011-03-28
261932 AH-2 2-2.5' soil 2011-03-24 00:00	2011-03-28
261933 AH-2 3-3.5' soil 2011-03-24 00:00	2011-03-28
261934 AH-2 4-4.5' soil 2011-03-24 00:00	2011-03-28

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
261935	AH-2 5-5.5'	soil	2011-03-24	00:00	2011-03-28
261936	AH-2 6-6.5'	soil	2011-03-24	00:00	2011-03-28
261937	AH-2 7-7.5'	soil	2011-03-24	00:00	2011-03-28
261938	AH-2 8-8.5'	soil	2011-03-24	00:00	2011-03-28
261939	AH-3 0-1'	soil	2011-03-24	00:00	2011-03-28
261940	AH-3 1-1.5'	soil	2011-03-24	00:00	2011-03-28
261941	AH-3 2-2.5'	soil	2011-03-24	00:00	2011-03-28
261942	AH-3 3-3.5'	soil	2011-03-24	00:00	2011-03-28
261943	AH-3 4-4.5'	soil	2011-03-24	00:00	2011-03-28
261944	AH-3 5-5.5'	soil	2011-03-24	00:00	2011-03-28
261945	AH-3 6-6.5'	soil	2011-03-24	00:00	2011-03-28
261946	AH-3 7-7.5'	soil	2011-03-24	00:00	2011-03-28
261947	AH-3 8-8.5'	soil	2011-03-24	00:00	2011-03-28
261948	AH-3 9-9.5'	soil	2011-03-24	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 26 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael april

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/Houma State #1 TB were received by TraceAnalysis, Inc. on 2011-03-28 and assigned to work order 11032824. Samples for work order 11032824 were received intact at a temperature of 3.6 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	67886	2011-04-01 at 11:35	80015	2011-04-02 at 14:30
BTEX	S 8021B	67887	2011-04-01 at 11:35	80017	2011-04-03 at 08:12
Chloride (Titration)	SM 4500-Cl B	67767	2011-03-29 at 13:28	79938	2011-03-31 at 13:31
Chloride (Titration)	SM 4500-Cl B	67767	2011-03-29 at 13:28	79939	2011-03-31 at 13:31
Chloride (Titration)	SM 4500-Cl B	67767	2011-03-29 at 13:28	79940	2011-03-31 at 13:32
TPH DRO - NEW	S 8015 D	67823	2011-03-30 at 10:06	79924	2011-03-30 at 10:06
TPH GRO	S 8015 D	67886	2011-04-01 at 11:35	80016	2011-04-02 at 14:30
TPH GRO	S 8015 D	67887	2011-04-01 at 11:35	80018	2011-04-03 at 08:12

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 11032824 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 4, 2011 114-6400856 Work Order: 11032824 COG/Houma State #1 TB Page Number: 4 of 26 Eddy Co, NM

Analytical Report

Sample: 261925 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 80015 67886		Analytical Date Anal Sample Pi	Method: yzed: reparation:	S 8021B 2011-04-02 2011-04-01		Prep Met Analyzed Prepared	bod: S 5035 By: ME By: ME
			R	L				
Parameter	Fla	ıg	Resu	lt	Units]	Dilution	RL
Benzene			< 0.020	0	mg/Kg		1	0.0200
Toluene			0.17	2 ·	mg/Kg		1	0.0200
Ethylbenzene	1		< 0.020	0	mg/Kg		1	0.0200
Xylene			0.55	2	mg/Kg		1	0.0200
						Spike	Percent	Recovery
Surrogate –		Flag	g Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ene (TFT)		2.26	mg/Kg	1	2.00	113	52.8 - 137
4-Bromofluor	obenzene (4-BFB))	2.32	mg/Kg	1	2.00	116	38.4 - 157

Sample: 261925 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79938 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		4330	mg/Kg	100	4.00

Sample: 261925 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical	Method: S 8015 D	Prep Method:	N/A
QC Batch:	79924	Date Analy	zed: 2011-03-30	Analyzed By:	kg
Prep Batch:	67823	Sample Pre	paration: 2011-03-30	Prepared By:	kg
		\mathbf{RL}			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
DRO		280	mg/Kg	1	50.0

Report Date: April 4, 2011 114-6400856		Work Order: 11032824 COG/Houma State #1 TB				Page Number: 5 of 26 Eddy Co, NM		
Surrogate	Flag	Result	Units	Dilu	tion	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	1	141	mg/Kg			100	141	70 - 130
Sample: 26	1925 - AH-1 0	-1'						
Laboratory:	Midland							
Analysis:	TPH GRO		Analytical	Method:	S 8015 D		Prep Met	hod: S 5035
QC Batch:	80016		Date Anal	vzed:	2011-04-02	2	Analyzed	By: ME
Prep Batch:	67886		Sample Pr	eparation:	2011-04-01		Prepared	By: ME
			\mathbf{RL}					
Parameter	Fl	ag	\mathbf{Result}		Units		Dilution	RL
GRO			39.2		mg/Kg	· · · · · · · · · · · · · · · · · · ·	1	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	n Amount	Recovery	Limits
Trifluorotolu	ene (TFT)	<u>Q</u>	2.35	mg/Kg	1	2.00	118	48.5 - 152
4-Bromofluor	obenzene (4-BF	B)	2.36	mg/Kg	1	2.00	118	42 - 159

Sample: 261926 - AH-1 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79938	Date Analyzed:	2011-03-31	Analyzed By:	AR
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		255	mg/Kg	50	4.00

Sample: 261927 - AH-1 2-2.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79938	Date Analyzed:	2011-03-31	Analyzed By:	AR
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR.
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride		398	mg/Kg	50	4.00

¹High surrogate recovery due to peak interference.

Report Date: April 4, 2011 114-6400856			Work Order: 11032824 COG/Houma State #1 TB				Page Number: 6 of 2 Eddy Co, NN		
Sample: 26	1928 - AH-1 3-3.5'								
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79938 67767		Analyt Date A Sample	ical Method malyzed: e Preparatio	: SM 4500-C 2011-03-31 n: 2011-03-29	B B	Prep Metho Analyzed B Prepared B	od: N/A y: AR y: AR	
			\mathbf{RL}						
Parameter	Flag		Result		Units		Dilution	RL	
Chloride			416		mg/Kg		50	4.00	
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79938 67767		Analyt Date A Sample	ical Method malyzed: Preparation	: SM 4500-C 2011-03-31 n: 2011-03-29	B B	Prep Metho Analyzed B Prepared B	od: N/A y: AR y: AR	
Parameter	Flag		RL Result		Units		Dilution	RL	
Chloride			326		mg/Kg		50	4.00	
Sample: 26	1930 - AH-2 0-1'								
Laboratory:	Midland								
Analysis:	BTEX		Analytical N	Aethod: S	8021B		Prep Method:	S 5035	
	80015		Date Analyz	zed· 2/	011-04-02		Analyzed By:	ME	
QC Batch:	00010			JULI: 2	011-04-02				
QC Batch: Prep Batch:	67886		Sample Prep	paration: 2	011-04-01		Prepared By:	ME	
QC Batch: Prep Batch:	67886		Sample Prep RL	paration: 2	011-04-01		Prepared By:	ME	
QC Batch: Prep Batch: Parameter	67886 Flag		Sample Prej RL Result	paration: 2	011-04-01 Units	<u>r</u>	Prepared By:	ME RL	
QC Batch: Prep Batch: Parameter Benzene	67886 Flag		Sample Prep RL Result 0.447	paration: 2	Units mg/Kg	I	Prepared By: Dilution 5	ME ME 0.0200	
QC Batch: Prep Batch: Parameter Benzene Foluene	67886 Flag		Sample Prep RL Result 0.447 1.05	paration: 2	Units mg/Kg mg/Kg	ſ	Prepared By: Dilution 5 5	ME ME 0.0200 0.0200	
2C Batch: Prep Batch: Parameter Benzene Foluene Ethylbenzene	67886 Flag		Sample Prep RL 0.447 1.05 0.974	paration: 2	Units mg/Kg mg/Kg mg/Kg	I	Prepared By: Dilution 5 5 5	ME ME 0.0200 0.0200 0.0200	
.QC Batch: Prep Batch: Parameter Benzene Foluene Sthylbenzene Kylene	67886 Flag		Sample Prep RL Result 0.447 1.05 0.974 5.17	paration: 2	Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	<u>r</u>	Prepared By: Dilution 5 5 5 5 5 5	ME ME 0.0200 0.0200 0.0200 0.0200	
QC Batch: Prep Batch: Parameter Benzene Toluene Ethylbenzene Xylene	67886 Flag		Sample Prep RL 0.447 1.05 0.974 5.17	paration: 2	Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg	I Spike	Prepared By: Dilution 5 5 5 5 5 Percent	ME ME 0.0200 0.0200 0.0200 0.0200 Recovery	
QC Batch: Prep Batch: Parameter Benzene Foluene Sthylbenzene Xylene	67886 Flag	Flag	Sample Prep RL 0.447 1.05 0.974 5.17 Result	Units	Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Dilution	E Spike Amount	Prepared By: Dilution 5 5 5 5 Percent Recovery	ME ME 0.0200 0.0200 0.0200 0.0200 Recovery Limits	
QC Batch: Prep Batch: Parameter Benzene Toluene Sthylbenzene Xylene Surrogate Frifluorotolue	67886 Flag ene (TFT)	Flag	Sample Prep RL 0.447 1.05 0.974 5.17 Result 5.26	Units mg/Kg	Units mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg Dilution 5	Spike Amount 5.00	Prepared By: Dilution 5 5 5 5 Percent Recovery 105 5	ME ME 0.0200 0.0200 0.0200 0.0200 0.0200 Recovery Limits 2.8 - 137	

Report Date 114-6400856	2011 x April 4, 2011		Work COG/H	Order: 1103 ouma State	32824 #1 TB	Page Nu 1	mber: 7 of 26 Eddy Co, NM
Sample: 26	51930 - AH-2 ()-1'					
Laboratory:	Midland						
Analysis:	Chloride (Titr	ation)	Analytica	al Method:	SM 4500-Cl B	Prep M	ethod: N/A
QC Batch:	79938		Date Ana	alyzed:	2011-03-31	Analyze	ed By: AR
Prep Batch:	67767		Sample F	Preparation:	2011-03-29	Prepare	d By: AR
			RL				
Parameter	F	lag	Result		Units	Dilution	RL
Chloride			1870	1	ng/Kg	100	4.00
Sample: 26	51930 - AH-2 ()-1'					
Laboratory:	Midland						
Analysis:	TPH DRO - N	IEW	Analytic	al Method:	S 8015 D	Prep M	ethod: N/A
QC Batch:	79924		Date Ar	nalyzed:	2011-03-30	Analyze	d By: kg
Prep Batch:	67823		Sample	Preparation	2011-03-30	Prepare	d By: kg
			\mathbf{RL}				
Parameter	F	lag	Result		Units	Dilution	RL
DRO			590]	ng/Kg	1	50.0
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	2	176	mg/Kg	1	100	176	70 - 130
Sample: 26	51930 - AH-2 ()-1'					
Laboratory:	Midland						
Analysis:	TPH GRO		Analytical M	ethod: S	8015 D	Prep Met	hod: S 5035
QC Batch:	80016		Date Analyze	ed: 20	11-04-02	Analyzed	By: ME
Prep Batch:	67886		Sample Prep	aration: 20	11-04-01	Prepared	By: ME
_			\mathbf{RL}				
Parameter	F	lag	Result		Units	Dilution	RL
GRO			384	1	ng/Kg	5	2.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5.48	mg/Kg	5	5.00	110	48.5 - 152
4-Bromofluorobenzene (4-BFB)		6.44	mg/Kg	5	5.00	129	42 - 159

²High surrogate recovery due to peak interference.

Report Date 114-6400856	: April 4, 2011	Work Order: 1103 COG/Houma State	32824 #1 TB	Page Number: Eddy C	8 of 26 o, NM
Sample: 26	1931 - AH-2 1-1.5'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79938 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		208	mg/Kg	50	4.00
Sample: 26	1932 - AH-2 2-2.5'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79938 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
D	Plan	RL	Unita	Dilution	DI
Parameter Chlorido	Flag	<u> </u>	mg/Kg	50	$-\frac{\text{RL}}{4.00}$
Sample: 26 Laboratory: Analysis: QC Batch:	1933 - AH-2 3-3.5' Midland Chloride (Titration) 79938	Analytical Method: Date Analyzed:	SM 4500-Cl B 2011-03-31	Prep Method: Analyzed By:	N/A AR.
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200 1	mg/Kg	50	4.00
Sample: 26	1934 - AH-2 4-4.5'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79939 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
T (01 (0111()))))					And the second se

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		COG/Houma State	#1 TB	Eddy C	or 26), NM	
Sample: 26	1935 - AH-2 5-5.5'					
Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A	
QC Batch:	79939	Date Analyzed:	2011-03-31	Analyzed By:	AR.	
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR	
_		RL				
Parameter	Flag	Result	Units	Dilution	<u></u>	
Chloride		460	mg/Kg	50	4.00	
Sample: 26	51936 - AH-2 6-6.5'					
Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A	
QC Batch:	79939	Date Analyzed:	2011-03-31	Analyzed By:	\mathbf{AR}	
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR	
		RL				
Parameter	Flag	Result	Units	Dilution	RL	
Chloride		489	ng/Kg	50	4.00	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	5 1937 - AH-2 7-7.5' Midland Chloride (Titration) 79939 67767	489 Analytical Method: Date Analyzed: Sample Preparation:	ng/Kg SM 4500-Cl B 2011-03-31 2011-03-29	50 Prep Method: Analyzed By: Prepared By:	4.00 N/A AR AR	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch:	51937 - AH-2 7-7.5' Midland Chloride (Titration) 79939 67767	489 Analytical Method: Date Analyzed: Sample Preparation: RL Propult	ng/Kg SM 4500-Cl B 2011-03-31 2011-03-29	50 Prep Method: Analyzed By: Prepared By: Dilution	4.00 N/A AR AR	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride	51937 - AH-2 7-7.5' Midland Chloride (Titration) 79939 67767 Flag	489 Analytical Method: Date Analyzed: Sample Preparation: RL Result <200	ng/Kg SM 4500-Cl B 2011-03-31 2011-03-29 Units ng/Kg	50 Prep Method: Analyzed By: Prepared By: Dilution 50	4.00 N/A AR AR RL 4.00	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 26 Laboratory: Analysis: QC Batch:	51937 - AH-2 7-7.5' Midland Chloride (Titration) 79939 67767 Flag 51938 - AH-2 8-8.5' Midland Chloride (Titration) 79939	489 Analytical Method: Date Analyzed: Sample Preparation: RL Result <200 Analytical Method: Date Analyzed:	Mg/Kg SM 4500-Cl B 2011-03-31 2011-03-29 Units Mg/Kg SM 4500-Cl B 2011-03-31	50 Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By:	4.00 N/A AR AR 4.00 N/A AR	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Parameter Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	31937 - AH-2 7-7.5' Midland Chloride (Titration) 79939 67767 Flag 51938 - AH-2 8-8.5' Midland Chloride (Titration) 79939 67767	489 Analytical Method: Date Analyzed: Sample Preparation: RL Result <200 Analytical Method: Date Analyzed: Sample Preparation: RL	Mg/Kg SM 4500-Cl B 2011-03-31 2011-03-29 Units Mg/Kg SM 4500-Cl B 2011-03-31 2011-03-29	50 Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By:	4.00 N/A AR AR AR 4.00 N/A AR AR	
Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Files Widland Chloride (Titration) 79939 67767 Flag Flag Flag Guidland Chloride (Titration) 79939 67767 Flag Guidland Chloride (Titration) 79939 67767	489 Analytical Method: Date Analyzed: Sample Preparation: RL Result <200 Analytical Method: Date Analyzed: Sample Preparation: RL Result	Mg/Kg SM 4500-Cl B 2011-03-31 2011-03-29 Units Mg/Kg SM 4500-Cl B 2011-03-31 2011-03-29 Units	50 Prep Method: Analyzed By: Prepared By: Dilution 50 Prep Method: Analyzed By: Prepared By: Prepared By:	4.00 N/A AR AR 4.00 4.00 N/A AR AR AR	

Report Date: April 4, 2011	Work Order: 11032824	Page Number: 10 of 26
114-6400856	COG/Houma State #1 TB	Eddy Co, NM
·····		

Sample: 261939 - AH-3 0-1'

Laboratory:	Midland							
Analysis:	BTEX		Analytical	Method:	S 8021B		Prep Metl	nod: S 5035
QC Batch:	80017		Date Analy	zed:	2011-04-03		Analyzed	By: ME
Prep Batch:	67887		Sample Pre	eparation:	2011-04-01		Prepared	By: ME
			RL	,				
Parameter	\mathbf{Flag}		Result	i	Units	Γ	Dilution	RL
Benzene	. " <u>Ataina</u> "		< 0.0200)	mg/Kg		1	0.0200
Toluene			< 0.0200)	mg/Kg		1	0.0200
Ethylbenzene			< 0.0200	i i	mg/Kg		1	0.0200
Xylene			< 0.0200		mg/Kg		1	0.0200
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ne (TFT)		2.37	mg/Kg	1	2.00	118	52.8 - 137
4-Bromofluor	obenzene (4-BFB)		2.40	mg/Kg	1	2.00	120	38.4 - 157

Sample: 261939 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79939 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		\mathbf{RL}			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		2380	mg/Kg	100	4.00

Sample: 261939 - AH-3 0-1'

n-Tricosane		117	mg/Kg	1	100	117	70 - 130
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
DRO			<50.0	111	g/Kg	1	50.0
Parameter	F	lag	RL Result	Į	Units	Dilution	RL
Analysis: QC Batch: Prep Batch:	TPH DRO - N 79924 67823	NEW	Analyti Date An Sample	cal Method: nalyzed: Preparation:	S 8015 D 2011-03-30 2011-03-30	Prep M Analyz Prepare	fethod: N/A ed By: kg ed By: kg
Laboratory:	Midland						

Report Date: April 4, 2011	Work Order: 11032824	Page Number: 11 of 26
114-6400856	COG/Houma State #1 TB	Eddy Co, NM

Sample: 261939 - AH-3 0-1'

Laboratory:	Midland							
Analysis:	TPH GRO		Analytical	Method:	S 8015 D		Prep Meth	nod: S 5035
QC Batch:	80018		Date Anal	yzed:	2011-04-03		Analyzed	By: ME
Prep Batch:	67887		Sample Pr	reparation:	2011-04-01		Prepared	By: ME
			\mathbf{RL}					
Parameter	Flag		Result		Units	E	liution	RL
GRO			<2.00	-	mg/Kg		1	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolu	ene (TFT)		2.50	mg/Kg	1	2.00	125	48.5 - 152
4-Bromofluor	obenzene (4-BFB)	•	2.31	mg/Kg	1	2.00	116	42 - 159

Sample: 261940 - AH-3 1-1.5'

RL		·
100		
RL		

Sample: 261941 - AH-3 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79939 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		<200	mg/Kg	50	4.00

Sample: 261942 - AH-3 3-3.5'

,

Laboratory:MidlandAnalysis:Chloride (Titration)Analytical IQC Batch:79939Date AnalyPrep Batch:67767Sample Prep	Method: SM 4500-Cl B	Prep Method:	N/A
	zed: 2011-03-31	Analyzed By:	AR
	paration: 2011-03-29	Prepared By:	AR

Report Date 114-6400856	21 April 4, 2011	Work Order: 1103 COG/Houma State	r: 11032824 Page Number: 12 of 20 State #1 TB Eddy Co, NM		
Perameter	Flag	RL Bosult	Units	Dilution	BI
Chloride	1 1005	<200	mg/Kg	50	4.00
Sample: 26	1943 - AH-3 4-4.5'				
Analycic:	Midland Chlorido (Titration)	Analytical Mothod	SM 4500 CLB	Pron Method:	N/I
OC Batch	79939	Date Analyzed	2011-03-31	Analyzed By:	AR
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR
1		· ·		I V	
_		RL			-
Parameter	Flag	Result	Units	Dilution	<u></u>
Chloride		<200	mg/Kg	50	4.()
Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	1944 - AH-3 5-5.5' Midland Chloride (Titration) 79940 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/. AR AB
i tep Daton.	01101	BL.	2011-00-29	Trepared by.	лц
D			TT		ħ
Parameter	Flag	Result	Units	Dilution	R

Sample: 261945 - AH-3 6-6.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79940 67767	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-Cl B 2011-03-31 : 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Chloride	······································	<200	mg/Kg	50	4.00

Sample: 261946 - AH-3 7-7.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79940	Date Analyzed:	2011-03-31	Analyzed By:	AR.
Prep Batch:	67767	Sample Preparation:	2011-03-29	Prepared By:	AR

Report Date: April 4, 2011 114-6400856		Work Ore COG/Hour	ler: 11032824 na State #1 TB	Page Number: 13 of 26 Eddy Co, NM		
Parameter	Flag	RL Result	Units	Dilution	RL	
Chloride		<200	mg/Kg	50	4.00	

Sample: 261947 - AH-3 8-8.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79940 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		267 1	ng/Kg	50	4.00

Sample: 261948 - AH-3 9-9.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79940 67767	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-31 2011-03-29	Prep Method: Analyzed By: Prepared By:	N/A AR AR
T		RL	TT 1.		DI
Parameter	Flag	Result	Units	Dilution	RL
Chloride		271	ing/Kg	50	4.00

Method Blank (1) QC Batch: 79924

QC Batch:	79924	Date Analyzed:	2011-03-30	Analyzed By:	kg
Prep Batch:	67823	QC Preparation:	2011-03-30	Prepared By:	kg

				MDL				
Parameter Flag				Result	J	Units		
DRO				<15.7	. m	50		
					Spike	Percent	Recovery	
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits	
n-Tricosane		121	mg/Kg	1	100	121	70 - 130	

Report Date: April 4, 114-6400856	2011	Work Order: 11032824 COG/Houma State #1 TB					Page Number: 14 of 26 Eddy Co, NM		
Method Blank (1)	QC Batch: 79938								
QC Batch: 79938 Prep Batch: 67767		Date Ana QC Prep	alyzed: aration:	2011 2011	-03-31 -03-29		Analyz Prepare	ed By: ed By:	AR AR
			М	DL		TT •.			DI
Parameter Chloride	Flag				Units mg/Kg			$\frac{\text{RL}}{4}$	
						6/6			
Method Blank (1)	QC Batch: 79939								
QC Batch: 79939		Date Ana	alyzed:	2011	-03-31		Analyz	ed By:	AR.
Prep Batch: 67767		QC Prep	aration:	2011	-03-29		Prepar	ed By:	AR.
_	-		М	DL		** * k .			D.I.
Parameter	Flag		Res	sult		Units			$\frac{\text{RL}}{4}$
						0/_0			
Method Blank (1)	QC Batch: 79940								
QC Batch: 79940		Date Analyzed: 2011-03-31				Analyz	ed By:	AR	
Prep Batch: 67767		QC Prep	aration:	2011	-03-29		Prepar	ed By:	AR
D	Flor		M	DL		Unito			DI
Parameter Chloride	Flag			85		mg/Kg			<u></u>
<u></u>									
Method Blank (1)	QC Batch: 80015								
QC Batch: 80015		Date Ana	alyzed:	2011-	04-02		Analyz	ed By:	ME
Prep Batch: 67886		QC Prep	aration:	2011-	-04-01		Prepare	ed By:	ME
				MDL					
Parameter	Flag		I	Result		Units			RL
Benzene			<0	0.0118		mg/Kg			0.02
Toluene			<0.0	00050		mg/Kg			0.02
Ethylbenzene			<0.0	00800		mg/Kg			0.02
Ayiene			<0.	00013		mg/Kg			0.02
Quimorata	Floo	Pogult	I Inste	0	Dilution	Spike	Percent	Rec	overy
Durrogate	r tag	1 72		8 (a	1	2 00	Recovery	66 G	
A Bromofluorohongene	(A BEB)	1.70	mg/r	хg Сог	1	2.00 2.00	86 09	00.0 55.4	- 122
+-promonuoropenzene	(4-DFD)	1.19	mg/r	<u>-8</u>	L	2.00	00	00.4	- 124

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Report Date: April 4, 2 114-6400856	2011	Wo COG	rk Order: /Houma St	11032824 ate #1 TB	Page Number: 15 of 2 Eddy Co, NN			
Method Blank (1)	QC Batch: 80016							
QC Batch: 80016 Prep Batch: 67886		Date Ana QC Prepa	alyzed: 2 aration: 2	2011-04-02 2011-04-01		Analyz Prepare	ed By: ME ed By: ME	
			MDI					
Parameter	Flag		Resul	t	Unit	8	RL	
GRO			<0.75	3	mg/K	-g	2	
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	$\begin{array}{c} 1.88\\ 1.66\end{array}$	mg/Kg mg/Kg	1 1	$\begin{array}{c} 2.00 \\ 2.00 \end{array}$	94 83	67.6 - 150 52.4 - 130	
Method Blank (1) QC Batch: 80017 · Prep Batch: 67887	QC Batch: 80017	Date Ana QC Prepa	dyzed: 2 aration: 2	011-04-03 011-04-01		Analyz Prepara	ed By: ME ed By: ME	
Paramotor	Flor		M	DL	Unit	-0	BI	
Benzene	Flag		< 0.0	18	mg/F	م. (و	0.02	
Toluene			< 0.006	300	mg/I	-g ζg	. 0.02	
Ethylbenzene			<0.008	350	mg/I	ζg	0.02	
Xylene	·····		< 0.000	513	mg/ł	ζg	0.02	
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Triffuorotoluene (TFT)		1.57	mg/Kg	1	2.00	78	66.6 - 122	
4-Bromofluorobenzene (4-BFB)	1.72	mg/Kg	1	2.00	86	55.4 - 124	
Method Blank (1)	QC Batch: 80018							
QC Batch: 80018 Prep Batch: 67887		Date Ana QC Prepa	lyzed: 2 aration: 2	011-04-03 011-04-01		Analyz Prepar	ed By: ME ed By: ME	
			MDI	J				
Parameter	Flag		Result		Units	3	RL	
GRU	· · · · · · · · · · · · · · · · · · ·		1.58	<u> </u>	mg/K	g	2	
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT)		1.63	mg/Kg	1	2.00	82	67.6 - 150	
4-Bromofluorobenzene (4-BFB)	1.66	mg/Kg	1	2.00	83	52.4 - 130	

Report Date 114-6400856	: April 4, 20	11	Work Order: 11032824Page Number: 16 of 2COG/Houma State #1 TBEddy Co, NM							16 of 26 Co, NM		
Laboratory	Control S	pike (LC	S-1)									
QC Batch:	79924			Date A	nalvzed:	2011-03	-30			Analy	vzed E	3v: kg
Prep Batch:	67823			QC Pr	eparation	: 2011-03	-30			Prepa	red B	y: kg
-				-	-					-		
			τC	3			Spiles	Moto				Doc
Param			Rest	5 ilt	Units	Dil	Amount	Resu	h R	ec	T	nec. Limit
DRO	· · · ·		256		ng/Kg	1	250	<15.	$\frac{10}{7}$ 1	.02	47.5	- 144.1
Percent rocos	ory is based	on the st	viko rogult	RPD is	hased on	the spike	and spike d	mlicate	regult	<u> </u>		
I ercent recov	ery is based	on the sp	JIKE TESUIL.	ILI D IS	Dascu OII	uie spike (and spine di	upincase	103010.			
			LCSD			Spike	Matrix		Rec.			RPD
Param			Result	Units	Dil.	Amount	Result	Rec.	Limit	1	RPD	Limit
DRO			261	mg/Kg	1	250	<15.7	104	47.5 - 14	4.1	2	20
Percent recov	very is based	on the sp	oike result.	RPD is	based on	the spike a	and spike d	uplicate :	result.			
		LCS	LCSD				Snike	\mathbf{LC}	s I	CSD		Rec
Surrogate		Result	Result	τ	Jnits	Dil.	Amount	Re	с. 2	Rec.		Limit
n-Tricosane		126	122	m	g/Kg	1	100	12	6	122	,	70 - 130
Prep Batch:	67767			QC Pre	paration:	2011-03-	29			Prepar	ed By	r: AR
			LC	s			Spike	Ma	atrix			Rec.
Param			Res	ult	Units	Dil.	Amount	Re	\mathbf{sult}	Rec.		Limit
Chloride			97	.6	mg/Kg	1	100	<	3.85	98	8	35 - 115
Percent recov	ery is based	on the sp	oike result.	RPD is	based on	the spike a	and spike di	iplicate i	result.			
			LCSD			Spika	Matrix		Rou			RBD
Param			Result	Units	Dil	Amount	Result	Bec	Limit	t. F	PD	Limit
Chloride			103	mg/K	g 1	100	<3.85	103	85 - 11	<u> </u>	5	$\frac{20}{20}$
Percent recov	very is based	on the sp	oike result.	RPD is	based on	the spike a	and spike di	iplicate i	result.			
Inhonatom	Control St	siles (T.C	Q 1)									
Laboratory	Control 5		5-1)									
QC Batch:	79939			Date A	nalyzed:	2011-03-	31			Analyz	ed By	': AR
Prep Batch:	67767			QC Pre	eparation:	2011-03-	29			Prepar	əd By	: AR
			LC	s			Spike	Ma	atrix			Rec.
Param			Res	ult	Units	Dil.	Amount	Re	sult	Rec.		Limit
Chloride			97	.5	mg/Kg	1	100	<	3.85	98	8	35 - 115
Percent recov	ery is based	on the sp	ike result.	RPD is	based on	the spike a	and spike du	iplicate i	esult.			

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Report Date: April 4, 2011 114-6400856		W COC	ork Orde G/Houma	r: 11032824 State #1 '	4 TB		Page	Number: Eddy	17 of 26 Co, NM
Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Percent recovery is based on th	ne spike result. 1	$\frac{\text{mg/Kg}}{\text{RPD is}}$	based on	the spike a	nd spike du	plicate r	esult.	4	
ŭ	-			- .	-	•			
Laboratory Control Spike	(LCS-1)								
QC Batch: 79940 Prep Batch: 67767		Date Aı QC Prej	nalyzed: paration:	2011-03-3 2011-03-2	31 29		An Pre	alyzed By epared By	y: AR v: AR
Develop	LCS	5	Thite	Dil	Spike	Ma	trix		Rec.
Chloride	97.0)	mg/Kg	<u> </u>	100		sun r 5.85	97	$\frac{111111}{85 - 115}$
Percent recovery is based on th	ne spike result. I	RPD is	based on	the spike a	nd spike du	plicate r	esult.		
v				Spileo	Motrix	-	Pog		BDD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	102	mg/Kg	; 1	100	<3.85	102	85 - 115	5	20
LaboratoryControl SpikeQC Batch:80015Prep Batch:67886	(LCS-1)	Date Ar QC Prej	alyzed: paration:	2011-04-0 2011-04-0	92)1		An Pre	alyzed By epared By	r: ME : ME
	LCS				Spike	Matr	ix		Rec
Param	Result	t U	Jnits	Dil.	Amount	Resu	lt Re	c.	Limit
Benzene	1.70	m	g/Kg	1	2.00	< 0.01	18 8	5 81	.9 - 108
Toluene	1.76	\mathbf{n}	g/Kg	1	2.00	<0.00	500 8	8 81	.9 - 107
Ethylbenzene Xylene	1.91 5.75	m	g/Kg g/Kg	1	2.00	<0.008	350 90 313 00	5 78 3 70	.4 - 107
Percent recovery is based on th	ne snike result	RPD is I	based on	the spike a	nd spike du	nlicate r	esult		.1 - 101
recent recovery is based on a			oabee on	ine spike a	na spike au	pincaut r	Cours.		
Daram	LCSD Recult	Unito	שמ	Spike A mount	Matrix	Rea	Rec.	חמק	RPD Limit
Benzene	1 76	mg/Kg	1	2.00	<0.0118	88	81.9 - 108	<u> </u>	20
Toluene	1.81	mg/Kg	1	2.00	< 0.00000	90	81.9 - 107	3	20
Ethylbenzene	1.96 1	mg/Kg	1	2.00	< 0.00850	98	78.4 - 107	3	20
Xylene	5.89 1	ng/Kg	1	6.00	< 0.00613	98	79.1 - 107	2	20
Percent recovery is based on th	ne spike result. I	RPD is l	pased on	the spike a	nd spike du	plicate r	esult.		

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.74	1.51	mg/Kg	1	2.00	87	76	70.2 - 114

continued ...

Report Date: April 4, 2011 114-6400856		W COC	ork Or S/Hour	der: 110328 na State #	324 1 TB]	Page N	umber: Eddy	18 of 26 Co, NM
control spikes continued	LCS	$_{ m LC}$	$^{\mathrm{SD}}$			Spi	ike	LCS	LCSI)	Rec.
Surrogate	Resul	t Res	sult	Units	Dil.	Amo	ount	Rec.	Rec.]	Limit
4-Bromofluorobenzene (4-BFB)	1.84	1.	59	mg/Kg	1	2.0	00	92	80	69	.8 - 121
Laboratory Control Spike (LC	CS-1)										
QC Batch: 80016 Prep Batch: 67886		Date An QC Prej	alyzed: paration	: 2011-04 n: 2011-04	4-02 4-01				Anal Prepa	yzed By ared By:	: ME ME
Param	LCS Resul	lt 1	Units	Dil	Sı Am	oike	Ma Be	trix sult	Rec.	Ĭ	Rec. Jimit
GRO	17.7	n	ig/Kg	1	2	0.0	<0	.753	88	60.9	9 - 95.4
Percent recovery is based on the si	nike result	RPD is l	- <u>0,0</u> 28ed 0	n the spike	and s	nike dr	nlicate	result			
Param	LCSD Result	Units	Dil.	Spike Amount	Ma 5 Re	utrix sult	Rec.	Re Lin	c. nit	RPD	RPD Limit
GRO	16.8	mg/Kg	1	20.0	<0	0.753	84	60.9 -	95.4	5	20
Percent recovery is based on the sp	pike result. 1	RPD is l	based o	on the spike	and s	pike du	plicate	e result.			
	T CR	τa	۹D			C	3-0	1.00	T CIGI	`	Dee
Surrogate	Besult	t Res	ault	Unite	Dil	Ame	unt	Rec	Rec	ו	nec. Limit
Triffuorotoluene (TFT)	2.03	1.	68	mg/Kg	1	2.0	00	102	84	61	9 - 142
4-Bromofluorobenzene (4-BFB)	1.93	1.	60	mg/Kg	1	2.0	00	96	80	68.	2 - 132
Laboratory Control Spike (LC QC Batch: 80017 Prep Batch: 67887	2S-1)	Date An QC Prej	alyzed: paration	: 2011-04 n: 2011-04	4-03 4-01				Anal Prepa	yzed By ared By:	: ME ME
Param	LCS Result	t U	Jnits	Dil.	Spi Amo	ke ount	Ma Re	trix sult	Rec.	J	Rec. Limit
Benzene	1.77	m	g/Kg	1	2.0)()	<0.	0118	88	81.	9 - 108
Toluene	1.80	m	g/Kg	1	2.0)0	<0.0	0600	90	81.	9 - 107
Ethylbenzene	1.89	\mathbf{m}	g/Kg	1	2.()()	<0.0	0850	94	78.	4 - 107
Xylene	5.75	m	g/Kg	1	6.0)0	<0.0	0613	96	79.	1 - 107
Percent recovery is based on the sp	pike result. 1	RPD is l	based o	n the spike	and s	pike du	iplicate	e result.			
	LCSD			Spike	Ma	atrix		Re	ec.		RPD
Param	Result	Units	Dil.	Amount	Re	esult	Rec.	Lir	nit	RPD	Limit
Benzene	1.75	mg/Kg	1	2.00	<0	.0118	88	81.9	- 108	1	20
Toluene	1.75 1	mg/Kg	1	2.00	<0.	00600	88	81.9	- 107	3	20
Ethylbenzene	1.83	mg/Kg	1	2.00	<0.	00850	92	78.4	- 107	3	20
Xylene	5.58 1	mg/Kg	1	6.00	<0.	00613	93	79.1	- 107	3	20
Percent recovery is based on the sp	oike result. I	RPD is l	based o	n the spike	and s	pike du	plicate	e result.			

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Report Date: April 4, 2011 114-6400856		Work Or COG/Hou	der: 11032 ma State #	824 ±1 TB			Page Nu	mber: Eddy	19 of 26 Co, NM
Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.)	Rec. Limit
Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB)	1.69 1.90	$1.68 \\ 1.91$	mg/Kg mg/Kg	1 1	$2.00 \\ 2.00$	84 95	84 96	70. 69.	.2 - 114 .8 - 121
4-Diomondoroscilizene (4-Di D)	1.00	1.01	<u> </u>	*	2.00				.0 121
Laboratory Control Spike (LC	2S-1)								
QC Batch: 80018	Da	te Analyzed	: 2011-0	4-03			Analy	zed By	: ME
Prep Batch: 67887	Q	C Preparatio	on: 2011-0	4-01			Prepa	red By:	ME
Paran	LCS Result	Units	Dil.	Spil Amo	ke M unt Re	atrix esult	Rec.	I	Rec. Limit
GRO	19.0	mg/Kg	1	20.	0 <0).753	95	60.9	9 - 95.4
Percent recovery is based on the s	oike result. RF	D is based o	on the spike	e and spi	ke duplicat	e result	•		
	LCSD		Spike	Mat	riv	ß	00		RPD
Param	Result U	Jnits Dil.	Amoun	t Resi	ult Rec.	Li	nit	RPD	Limit
GRO	19.0 m	g/Kg 1	20.0	<0.7	753 95	60.9	- 95.4	0	20
Percent recovery is based on the si	oike result. BF	PD is based o	on the spike	e and spi	ke duplicat	e result			
				1	<i></i>				-
0	LCS	LCSD	11.4	וית	Spike	LCS	LCSD)	Rec.
Surrogate Triffuenctaluona (TET)	Result	1 08	Units mg/Kg	<u></u>	Amount	$\frac{\text{Rec.}}{06}$		 	$\frac{1}{0}$ 149
4-Bromofluorobenzene (4-BFB)	1.95	2.00	nig/Kg nig/Kg	1	2.00	90	99 100	68	9 - 142
		2.00			2.00	00	100		
Matrix Spike (MS-1) Spiked	Sample: 2619	39							
QC Batch: 79924	D	ate Analyze	l: 2011-0)3-30			Anal	yzed B	y: kg
Prep Batch: 67823	Q	C Preparatio	on: 2011-0)3-30			Prep	ared By	y: kg
	MS			Spik	e Ma	trix		F	Rec.
Param	Result	Units	Dil.	Amou	int Res	sult	Rec.	L	imit
DRO	242	mg/Kg	1	250	<1	5.7	97	11.7	- 152.3
Percent recovery is based on the sp	oike result. RF	D is based o	on the spike	e and spi	ke duplicat	e result.	•		
	MCD		Omileo	Matu	:	D.	~ *-		מממ
Param	MSD Regult U	nite Dil	Amount	Rosu	IX It Bog	R. Lir	ec. mit	RPD	KrD Limit
DRO	233 mg	$\frac{1103}{g/Kg} = 1$	250	<15.	$\frac{10}{7}$ 1000.	11.7 -	152.3	4	20
Percent recovery is based on the s	oike result. RF	D is based o	on the spike	e and spi	ke duplicate	e result			
									-
MS Sumarata	MSD	T T 14	וית	Sp	ike	MS	MSD		Rec.
n Tricosano 191	126	Units mg/Kg			<u>)unt 1</u>	n.ec. 191	126		$\frac{11111}{0}$
121 121	120	ng/ ng	1			141	120	(0 - 100

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Report Date: April 4, 2011 114-6400856		W CO	/ork Orde G/Houma	r: 11032824 State #1 T	B		Page	e Number Eddy	20 of 26 7 Co, NM
Matrix Spike (MS-1) Spil	xed Sample: 26	1933							
QC Batch: 79938		Date A	nalvzed:	2011-03-31			А	nalyzed E	by: AR
Prep Batch: 67767		QC Pre	eparation:	2011-03-29	I		Р	repared B	y: AR
	MS	}			Spike	Ma	trix		Rec.
Param	Resu	lt	Units	Dil.	Amount	Res	sult	Rec.	Limit
Chloride	1000	0	mg/Kg	100	10000	<3	885	100	80 - 120
Percent recovery is based on the	e spike result. I	RPD is	based on	the spike and	d spike duj	plicate re	esult.		
•	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	10300	mg/Kg	g 100	10000	<385	103	80 - 120) 3	20
Percent recovery is based on the	e spike result. I	RPD is	based on	the spike and	d spike du	plicate r	esult.		
Matrix Spike (MS-1) Spil	ced Sample: 26	1943							
OC Batch: 79030		Doto A	natural	2011 02 21			٨	nalward F	W AR
Prep Batch: 67767		OC Pre	naryzeu. paration:	2011-03-29			P	repared B	v: AR
		QO I K	percenti	2011 00 20			-	ropulou L	,
	MS				Spike	Ma	triv		Rec
Param	Resu	lt.	Units	Dil.	Amount	Res	sult	Rec.	Limit
Chloride	9980)	mg/Kg	100	10000	<3	885	100	80 - 120
Percent recovery is based on the	e spike result. 1	RPD is	based on	the spike and	t spike du	plicate re	esult.		
u u	MOD			G., 11 .	N.C. danta		Dee		חחת
Dorom	MSD	Unito	T);I	Spike	Rogult	Roo	Kec. Limit	חספ	RPD Limit
Chloride	10300	mg/Kg	<u></u>	10000	<385	103	1000000000000000000000000000000000000		20
Downet recommend and on the			board on	the epile and	d aniles du	alicate w	- 12(
recent recovery is based on the	e spike result. I	RPD IS	Dased on	the spike and	а spike duj	plicate re	esuit.		
Matrix Spike (MS-1) Spil	ced Sample: 26	1959							
QC Batch: 79940		Date A:	nalyzed:	2011-03-31			А	nalyzed E	y: AR
Prep Batch: 67767		QC Pre	paration:	2011-03-29			Р	repared B	y: AR
	MS				Spike	Ma	trix		Rec.
Param	Resu	lt	Units	Dil.	Amount	Res	sult	Rec.	Limit
Chloride	1050	0	mg/Kg	100	10000	<3	85	101	80 - 120
Percent recovery is based on the	e spike result. 1	RPD is	based on	the spike and	l spike du	plicate re	esult.		
	Men			Spiles	Motniy		Dee		חסק
Param	Regult	Unite	Dil	Amount	Regult	Bec	riec. Limi+	PPD	Limit
Chloride	10800	mg/Ka	100	10000	<385	104	80 - 190	3	20
	10000		, <u>100</u>	1 11	1 11 1	101		U	20
r creent recovery is based off the	5 opine result. I	NFD IS	uaseu on	me spike and	i spike důj	meate f	court.		

Report Date: April 4, 2011 114-6400856		W COC	ork Ord J/Houm	er: 110328 a State #1	24 . TB			F	Page Nu	umber: Eddy	21 of 26 Co, NM
Matrix Spike (MS-1) Spik	ed Sample: 2	61925									
QC Batch: 80015 Prop. Batch: 67886		Date An	alyzed:	2011-04	-02				Analy	zed By	: ME
Trep Datch: 07860		QUIR	244 401011	. 2011-04	-01				repa	neu Dy	WIL
	M	3			Spike	3	Mat	riv			Rec
Param	Res	ılt. T	Inits	Dil.	Amou	nt	Res	ult	Rec.	J	Limit
Benzene	3 1.6	1 m	g/Kg	1	2.00		< 0.0	118	80	80	5 - 112
Toluene	4 1.7	0 m		1	2.00		0.17	24	76	82	4 - 113
Ethylbenzene	1.7	2 m	g/Kg	1	2.00		< 0.00)850	86	83	9 - 114
Xylene	⁵ 5.2	5 m	g/Kg	1	6.00		0.55	52	78	84	4 - 114
Percent recovery is based on the	e spike result.	RPD is l	based or	n the spike	and spi	ke dup	licate	result.			
	MSD			Spike	Mat	rix		Re	c.		RPD
Param	Result	Units	Dil.	Amount	Resi	ılt	Rec.	Lin	nit	RPD	Limit
Benzene	1.74	mg/Kg	1	2.00	< 0.0	118	87	80.5 -	112	8	20
Toluene	1.88	mg/Kg	1	2.00	0.17	24	85	82.4 -	· 113	10	20
Ethylbenzene	1.96	mg/Kg	1	2.00	< 0.00	850	98	83.9 -	- 114	13	20
Xylene	5.97	mg/Kg	1	6.00	0.55	52	90	84 -	114	13	20
Percent recovery is based on the	e spike result.	RPD is l	based or	n the spike	and spi	ke dup	licate	result.			
	M	5 M	SD			Spik	e	$_{MS}$	MSE)	Rec.
Surrogate	Res	ult Re	sult	Units	Dil.	Amou	int	Rec.	Rec.]	Linit
Trifluorotoluene (TFT)	1.8	7 2.	.28	mg/Kg	1	2		94	114	41.	3 - 117
4-Bromofluorobenzene (4-BFB)	2.1	2 2.	.41	mg/Kg	1	2		106	120	35.	5 - 129
Matrix Spike (MS-1) Spik	ed Sample: 2	61891									
OC Batch: 80016		Date An	alvzed	2011-04	-02				Anah	zed By	ME
Pren Batch: 67886		OC Prei	naration	: 2011-04	-01				Prepa	red By:	ME
10p 10000		QUII01	pen couron						1 10[50		
	М	S			${ m Spil}$	ke	Mat	trix			Rec.
Param	Res	ult	Units	Dil.	Amo	unt	Res	ult	Rec.]	Limit
GRO	19	.5 n	ng/Kg	1	20.	0	<0.	753	98	61.	8 - 114
Percent recovery is based on the	e spike result.	RPD is l	based or	1 the spike	and spi	ke dupl	licate	result.			
	MSD			Spike	Mat	rix		Ree	3.		RPD
Param	Result	Units	Dil.	Amount	Rest	ult I	Rec.	Lim	it	RPD	Limit
GRO	21.1	mg/Kg	1	20.0	< 0.7	'5 <u>3</u>	106	61.8 -	114	8	20
$\mathbf{D}_{\text{encoded}}$	······································				and ani	المعداد مما					

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

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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. ⁵Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

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Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.44	2.49	mg/Kg	1	2	122	124	50 - 162
4-Bromofluorobenzene (4-BFB)	2.29	2.35	$\mathrm{mg/Kg}$	1	2	114	118	50 - 162

Matrix Spike (MS-1) Spiked Sample: 261976

QC Batch:	80017	Date Analyzed:	2011-04-03	Analyzed By:	\mathbf{ME}
Prep Batch:	67887	QC Preparation:	2011-04-01	Prepared By:	\mathbf{ME}

Param	${ m MS}$ Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.83	mg/Kg	1	2.00	< 0.0118	92	80.5 - 112
Toluene	1.90	mg/Kg	1	2.00	< 0.00600	95	82.4 - 113
Ethylbenzene	2.10	mg/Kg	1	2.00	< 0.00850	105	83.9 - 114
Xylene	6.36	mg/Kg	1	6.00	< 0.00613	106	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	1.77	mg/Kg	1	2.00	< 0.0118	88	80.5 - 112	3	20
Toluene	1.84	mg/Kg	1	2.00	< 0.00600	92	82.4 - 113	3	20
Ethylbenzene	2.05		1	2.00	< 0.00850	102	83.9 - 114	2	20
Xylene	6.20	mg/Kg	1	6.00	< 0.00613	103	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)	6	2.36	2.27	mg/Kg	1	2	118	114	41.3 - 117
4-Bromofluorobenzene (4-BFB)		2.52	2.47	mg/Kg	1	2	126	124	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 261939

QC Batch: Prep Batch:	80018 67887	Dat. QC	Date Analyzed: QC Preparation:		I-03 I-01		Analyz Prepare	ed By: ME ed By: ME
Denemi		MS	T Tao it a	D:1	Spike	Matrix	D	Rec.
Param		Result	Units	DII.	Amount	Result	Rec.	Limit
GRO		19.8	mg/Kg	1	20.0	< 0.753	99	61.8 - 114

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

⁶High surrogate recovery due to peak interference.

114-6400850	5 			Work Or COG/Hou	Page Number: 23 Eddy Co									
Param		M R	ASD esult Ui	nits Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPI)]				
GRO			20.8 mg	/Kg 1	20.0	<0.753	104	61.8 - 11	4 5					
Percent reco	overy is based	on the spike	result. RP	D is based o	on the spike	and spike	duplicate	e result.						
			MS	MSD			Snike	MS	MSD	Ŧ				
Surrogate			Result	Result	Units	Dil.	Amount	Rec.	Rec.	Ĺ				
Trifluorotolu	lene (TFT)		2.43	2.52	mg/Kg	1	2	122	126	50				
4-Bromofluc	probenzene (4	-BFB)	2.41	2.54	mg/Kg	1	2	120	127	50				
Standard ((CCV-2)													
QC Batch:	79924		Da	te Analyzec	l: 2011-03-3	30			Analyzed	By:				
			CCV	s (CCVs	CCVs		Percent						
			Tru	e F	Found	Percen	t	Recovery		Da				
Param	Flag	Units	Cone	з. (Conc.	Recover	у	Limits		Anal				
DRO		mg/Kg	250		258	103		80 - 120	2	2011-				
Standard (QC Batch:	(CCV-3) 79924		Da	te Analyzed	l: 2011-03-3	30			Analyzed	By:				
Standard (QC Batch:	(CCV-3) 79924		Da CCV True	te Analyzed 7s C e F	l: 2011-03-3 CCVs Found	30 CCVs Percen	t	Percent Recovery	Analyzed	l By: Da				
Standard (QC Batch: Param	(CCV-3) 79924 Flag	Units	Da CCV True Cone	te Analyzed 7s – C e – F c. – C	l: 2011-03-(CCVs Found Conc.	30 CCVs Percen Recover	t 'Y	Percent Recovery Limits	Analyzed	By: Da Anal				
Standard (QC Batch: Param DRO	(CCV-3) 79924 Flag	Units mg/Kg	Da CCV True Cond 250	te Analyzec 7s (e F c. (l: 2011-03-3 CCVs Found Conc. 272	30 CCVs Percen Recover 109	t y	Percent Recovery Limits 80 - 120	Analyzed	By: Da Anal 2011-				
Standard (QC Batch: Param DRO Standard ((CCV-3) 79924 Flag (ICV-1)	Units mg/Kg	Da CCV True Cond 250	te Analyzed 7s C e F c. C	l: 2011-03-3 CCVs Found Conc. 272	30 CCVs Percen Recover 109	t y	Percent Recovery Limits 80 - 120	Analyzed	By: Da Anal 2011-				
Standard (QC Batch: Param DRO Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938	Units mg/Kg	Da CCV True Cone 250 Dat	te Analyzed 's (e F c. (l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3	30 CCVs Percen Recover 109	t 'y	Percent Recovery Limits 80 - 120	Analyzed	By: Da Anal 2011- By:				
Standard (QC Batch: Param DRO Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938	Units mg/Kg	Da CCV True Cond 250 Dat	te Analyzed Vs () e F c. () 	l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3 ICVs	30 CCVs Percen Recover 109	t y	Percent Recovery Limits 80 - 120 A Percent	Analyzed	Da Da Anal 2011- By:				
Standard (QC Batch: Param DRO Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938	Units mg/Kg	Da CCV True Cond 250 Dat ICV Tru	te Analyzed Vs (c. (c. (c. (c. (c. (c. (c. (c.	l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3 ICVs Found	30 CCVs Percen Recover 109 41 ICVs Percer	t 'Y	Percent Recovery Limits 80 - 120 A Percent Recovery	Analyzed	By: Da Anal 2011- By: Da				
Standard (QC Batch: Param DRO Standard (QC Batch: Param	(CCV-3) 79924 Flag (ICV-1) 79938 Flag	Units mg/Kg Units	Da CCV True Cond 250 Dat ICV Tru Con	te Analyzed s C e F c. C we Analyzed vs 10 10 10 10 10 10 10 10 10 10	l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3 ICVs Found Conc.	30 CCVs Percen Recover 109 31 ICVs Percer Recove	t y it	Percent Recovery Limits 80 - 120 A Percent Recovery Limits	Analyzed 2 Analyzed	Də Anal 2011- By: Də Anal				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride	(CCV-3) 79924 Flag (ICV-1) 79938 Flag	Units mg/Kg Units mg/Kg	Da CCV True Cond 250 Dat ICV Tru Cor 10	te Analyzed ys (e c. () c. () c. () vs nc. () 0	l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3 ICVs Found Conc. 99.9	30 CCVs Percen Recover 109 41 ICVs Percer Recove 100	t y ut ry	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115	Analyzed Analyzed	Da Da 2011 By: Da Anal 2011				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride Standard ((CCV-3) 79924 Flag (ICV-1) 79938 Flag (CCV-1)	Units mg/Kg Units mg/Kg	Da CCV True Cond 250 Dat ICV Tru Con 10	te Analyzed s C c F c. C se Analyzed vs nc. 0	l: 2011-03-3 CCVs Found Conc. 272 : 2011-03-3 ICVs Found Conc. 99.9	30 CCVs Percen Recover 109 31 ICVs Percer Recove 100	t y 	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115	Analyzed	Da Anal 2011- By: Da Anal 2011-				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938 Flag (CCV-1) 79938	Units mg/Kg Units mg/Kg	Da CCV True Com 250 Dat ICV Tru Con 10 Dat	te Analyzed s C e F c. C vs nc. 0 e Analyzed	 d: 2011-03-3 CCVs Found 272 2011-03-3 ICVs Found Conc. 99.9 2011-03-3 	30 CCVs Percen Recover 109 31 ICVs Percer Recove 100	t y ut ry	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115	Analyzed Analyzed	Da Anal 2011- By: Da Anal 2011- By:				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938 Flag (CCV-1) 79938	Units mg/Kg Units mg/Kg	Da CCV True Cond 250 Dat ICV Tru Con 10 Dat	te Analyzed ys () e F c. () ze Analyzed vs nc. 0 e Analyzed Vs	 d: 2011-03-3 CCVs Found 272 2011-03-3 ICVs Found Conc. 99.9 2011-03-3 CCVs 	30 CCVs Percen Recover 109 31 ICVs Percer Recove 100	t y ut ry	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115 A Percent	Analyzed Analyzed	Da Anal 2011 By: Da Anal 2011 By:				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride Standard (QC Batch:	(CCV-3) 79924 Flag (ICV-1) 79938 Flag (CCV-1) 79938	Units mg/Kg Units mg/Kg	Da CCV True Cond 250 Dat ICV Tru Cor 10 Dat CCC	te Analyzed ys (e e F c. () we Analyzed vs nc. 0 e Analyzed Vs ne	 d: 2011-03-3 CCVs Found 272 2011-03-3 ICVs Found Conc. 99.9 2011-03-3 CCVs Found 	30 CCVs Percen Recover 109 31 ICVs Percer Recove 100 41	t y ut ry	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115 A Percent Recovery	Analyzed Analyzed	Da Anal 2011 By: Da Anal 2011 By: Da				
Standard (QC Batch: Param DRO Standard (QC Batch: Param Chloride Standard (QC Batch: Param	(CCV-3) 79924 Flag (ICV-1) 79938 Flag (CCV-1) 79938	Units mg/Kg Units mg/Kg Units	Da CCV True Cond 250 Dat ICV Tru Cor 10 Dat CC Tru Cor	te Analyzed s C e F c. C we Analyzed vs nc. 0 vs te Analyzed vs te Analyzed vs te Analyzed vs te Analyzed	 l: 2011-03-3 CCVs Found 272 2011-03-3 ICVs Found Conc. 99.9 2011-03-3 CCVs Found Conc. 	30 CCVs Percen Recover 109 31 ICVs Percer Recove 100 41 CCVs Percer Recove	t y t ry 	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 85 - 115 A Percent Recovery Limits	Analyzed Analyzed Analyzed	Da Anal <u>;</u> 2011 By: Da Anal <u>;</u> 011-0 By: Da Anal <u>;</u>				

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Standard	(ICV-1)						
QC Batch:	79939		Date Analy	zed: 2011-03-	-31	Anal	yzed By: AR
Param Chloride	Flag	Units mg/Kg	ICVs True Conc. 100	ICVs Found Conc. 100	ICVs Percent Recovery 100	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-31
Standard	(CCV-1)						
QC Batch:	79939		Date Analy	zed: 2011-03-	-31	Anal	yzed By: AR
Param Chloride	Flag	Units mg/Kg	CCVs True Conc. 100	CCVs Found Conc. 99.6	CCVs Percent Recovery 100	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-31
Standard	(ICV-1)						
QC Batch:	79940		Date Analy	zed: 2011-03-	31	Anal	yzed By: AR
Param Chloride	Flag	Units mg/Kg	ICVs True Conc. 100	ICVs Found Conc. 99.9	ICVs Percent Recovery 100	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-31
Standard	(CCV-1)						
QC Batch:	79940		Date Analy	zed: 2011-03-	31	Anal	yzed By: AR
Param Chloride	Flag	Units mg/Kg	CCVs True Conc. 100	CCVs Found Conc. 100	CCVs Percent Recovery 100	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-31
Standard	(CCV-2)						
QC Batch:	80015		Date Analy	zed: 2011-04-	02	Anal	yzed By: ME
Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene Toluene		mg/Kg mg/Kg	$\begin{array}{c} 0.100\\ 0.100\end{array}$	$0.0885 \\ 0.0908$	88 91	80 - 120 80 - 120	2011-04-02 2011-04-02 continued

114-6400856	5	L	Work COG/E	: Order: 110328 Iouma State #	Page Number: 25 Eddy Co						
standard con	ntinued										
			CCVs	CCVs	CCVs	Percent					
			True	Found	Percent	Recovery	Date				
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyz				
Ethylbenzen	e	mg/Kg	0.100	0.0974	97	80 - 120	2011-04				
Xylene		mg/Kg	0.300	0.294	98	80 - 120	2011-04				
Standard (CCV-3)										
QC Batch:	80015		Date Analy	vzed: 2011-04-	02	Anal	yzed By: M				
			CCVs	CCVs	CCVs	Percent					
			True	Found	Percent	Recovery	Date				
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyz				
Benzene	<u> </u>	mg/Kg	0.100	0.0872	87	80 - 120	2011-04				
Toluene		mg/Kg	0.100	0.0887	89	80 - 120	2011-04				
Ethylbenzen	e	mg/Kg	0.100	0.0935	94	80 - 120	2011-04-				
Xylene		mg/Kg	0.300	0.282	94	80 - 120	2011-04				
Standard (QC Batch:	CCV-2) 80016		Date Analy CCVs	zed: 2011-04- CCVs	02 CCVs	Anal Percent	yzed By: M				
Standard (QC Batch: Param	CCV-2) 80016 Flag	Units	Date Analy CCVs True Conc.	zed: 2011-04- CCVs Found Conc.	02 CCVs Percent Recovery	Anal Percent Recovery Limits	yzed By: M Date Analyz				
Standard (QC Batch: Param GRO	CCV-2) 80016 Flag	Units mg/Kg	Date Analy CCVs True Conc. 1.00	zed: 2011-04- CCVs Found Conc. 1.20	02 CCVs Percent Recovery 120	Anal Percent Recovery Limits 80 - 120	yzed By: M Date Analyz 2011-04				
Standard (QC Batch: Param GRO Standard (CCV-2) 80016 Flag CCV-3)	Units mg/Kg	Date Analy CCVs True Conc. 1.00	zed: 2011-04- CCVs Found Conc. 1.20	02 CCVs Percent Recovery 120	Anal Percent Recovery Limits 80 - 120	yzed By: M Date <u>Analyz</u> 2011-04				
Standard (QC Batch: Param GRO Standard (QC Batch:	CCV-2) 80016 Flag CCV-3) 80016	Units mg/Kg	Date Analy CCVs True Conc. 1.00 Date Analy	zed: 2011-04- CCVs Found Conc. 1.20 zed: 2011-04-	02 CCVs Percent Recovery 120	Anal; Percent Recovery Limits 80 - 120 Anal;	yzed By: M Date <u>Analyz</u> 2011-04- yzed By: M				
Standard (QC Batch: Param GRO Standard (QC Batch:	CCV-2) 80016 Flag CCV-3) 80016	Units mg/Kg	Date Analy CCVs True Conc. 1.00 Date Analy CCVs	zed: 2011-04- CCVs Found Conc. 1.20 zed: 2011-04- CCVs	02 CCVs Percent Recovery 120 02 CCVs	Analy Percent Recovery Limits 80 - 120 Analy Percent	yzed By: M Date Analyza 2011-04- yzed By: M				
Standard (QC Batch: Param GRO Standard (QC Batch:	CCV-2) 80016 Flag CCV-3) 80016	Units mg/Kg	Date Analy CCVs True Conc. 1.00 Date Analy CCVs True	zed: 2011-04- CCVs Found Conc. 1.20 zed: 2011-04- CCVs Found	02 CCVs Percent Recovery 120 02 CCVs Percent	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery	yzed By: M Date Analyza 2011-04- yzed By: M Date				
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Report Da 114-640085	te: April 4, 2011 66		Work COG/H	Page Number: 26 of 20 Eddy Co, NM									
standard co	entinued												
			CCVs	CCVs	CCVs	Percent							
			True	Found	Percent	Recovery	Date						
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed						
Toluene		m mg/Kg	0.100	0.0847	85	80 - 120	2011-04-03						
Ethylbenze	ne	mg/Kg	0.100^{-1}	0.0893	89	80 - 120	2011-04-03						
Xylene		mg/Kg	0.300	0.271	90	80 - 120	2011-04-03						
Standard	(CCV-2)												
QC Batch:	80017		Date Analy	zed: 2011-04	-03	Anal	yzed By: ME						
			CCVs	CCVs	CCVs	Percent							
			True	Found	Percent	Recovery	Date						
Param	Flag	Units	Cone	Conc	Recovery	Limits	Analyzed						
Benzene	1108	mg/Kg	0.100	0.0888	89	80 - 120	2011-04-03						
Foluene		mg/Kg	0.100	0.0903	90	80 - 120	2011-04-03						
Ethylbenze	ne	mg/Kg	0.100	0.0972	97	80 - 120	2011-04-03						
Zvily io citac. Kvlene		mg/Kg	0.300	0.293	98	80 - 120	2011-04-03						
Standard	(CCV-1)												
QC Batch:	80018		Date Analy	zed: 2011-04	-03	Analy	yzed By: ME						
			CCVs	CCVs	CCVs	Percent							
			True	Found	Percent	Recovery	Date						
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed						
GRO	0	mg/Kg	1.00	1.06	106	80 - 120	2011-04-03						
		<u> </u>											
Standard	(CCV-2)												
QC Batch:	80018		Date Analy	zed: 2011-04	-03	Analy	zed By: ME						
			CCVs	CCVs	CCVs	Percent							
			True	Found	Percent	Recovery	Date						
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed						
TDO		mg/Kg	1.00	1.00	100	90 100	.0011 04 00						

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An	Analysis Request of Chain of Custody Record										L	PAGE:									/ OF: 、							
											ANALYSIS REQUEST (Circle or Specify Method No.)												ſ					
	TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946											05 (Ext. to C35)	d Cr Pb Hg Se	d Vr Pd Hg Se									TDS					
	AE:		SITE MANAGER:										1X10	Bac	Bac			0/624	70/625					s, pH,				
PROJECT N	0.: ,40 0 BS	ъ	PROJECT NAME: CCGi Houria Grufu #1 7B						(N)						ADDN S	als Ag As	is Ag As	iles Volatilee		8240/826	ni. Vol. 82	08			(Air) Btos)	ns/Cation	Ì	
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261925	3/24		3	X	AH.	1 0-1		1				X		Ý	X								X					
926						1-1.5'																						
927					$ \rangle$	2'2.5'																						
428						3'-3.5'																						
929						4:4.5'		1	1			$\ $																
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RECEIVING LAB	ORATORY:	7741			Time:	RECI	EIVED BY: (Signature)	2r	┢		me:			TETRA TECH CONTACT PERSON:									Re					
CITY:	lund	STATE:	-T/	(PHO		JP: DATE	3.28.4	T			12	2	~			ہے ،	ļ	1	Tav	wre ⁻	₹				A	Yes	arges ed:	No
3,6°U	TION WHEN	RECEIVED:			I	remarks: 7 total TPH exce	ads 510 mg/kg run a	leoper e	9,7,m	plice	<u>`</u>	/	_				ففاري ريائ	وسيزوم بالجارات	-									

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											ANALYSIS REQUEST (Circle or Specify Method No.)																	
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CLIENT NAM	VIE:					SITE MANAGER:	902	ŝ	1	PRES	SERN ETH	ATIVE	$\left \right $	1X10	Ba	Ba			0/624	70/625						Å, PH,		
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LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	9745	Eddy G, NM SAMPLE IDENTIFICATION		FILTERED (V/	HCL	HN03	ICE	NONE	BTEX 8021B	TPH 8015	RCRA Metais	TCLP Metals	TCLP Volatile	TCLP Semi Version Contract Con	GC.MS Vol. 8	GC.MS Semi.	PCB'3 8080/6	Pest. 808/608	Cannon Since	Alpha Beta (A	PLM (Asbesto	Major Anions		
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