SITE INFORMATION **Report Type: Closure** General Site Information: JR's Horz Federal Tank Battery Site: Company: COG Operating LLC Section, Township and Range Sec 10 T26S R29E Unit D Lease Number: NMNM-92177 **Eddy County** County: GPS: 32.06344° N 103.97959° W Surface Owner: Federal Mineral Owner: Starting in Malaga travel south 12 miles on Hyw 285, turn left on Co Rd 725 (Longhorn Rd) and Directions: travel 4 miles, turn right and travel 1.1 miles to tank battery. Release Data: Date Released: 11/10/2010 Type Release: Oil Source of Contamination: Oil Tanks MAR **I 3** 2013 Fluid Released: 328 bbls Fluids Recovered: 161 bbls MWOCD ARTESIA Official Communication: Name: Pat Ellis Ike Tavarez Company: COG Operating, LLC Tetra Tech Address: One Concho Center 1910 N. Big Spring 600 W. Illinois Ave. City: Midland Texas, 79701 Midland, Texas Phone number: (432) 686-3023 (432) 425-3878 Fax: (432) 684-7137 Email: pellis@conchoresources.com ike.tavarez@tetratech.com Ranking Criteria 4 24 Depth to Groundwater: Ranking Score Site Data <50 ft 20 50-99 ft 10 >100 ft. WellHead Protection: Ranking Score Site Data Water Source <1,000 ft., Private <200 ft. Water Source >1,000 ft., Private >200 ft. 0 Surface Body of Water: Ranking Score Site Data <200 ft. 20 200 ft - 1,000 ft. 10 >1,000 ft. 0 Ō Total Ranking Score: 0 ~ Acceptable Soil RRAL (mg/kg) Total BTEX Benzene TPH

10

50

5,000



February 13, 2013

Mr. Mike Bratcher **Environmental Engineer Specialist** Oil Conservation Division, District 2 811 S. First Street Artesia, New Mexico 88210



Re: Closure Report for the COG Operating LLC., JR's Horz Federal Tank Battery, Unit D, Section 10, Township 26 South, Range 29 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 JR's Horz Federal Tank Battery located in Unit D, Section 10, Township 26 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.06344°, W 103.97959°. 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 November 10, 2010, when an oil tank overflowed and released approximately three hundred and twenty eight (328) barrels of oil. The release was contained inside the facility firewall. To alleviate the problem, COG personnel used vacuum trucks to recover the fluids. One hundred and sixty-one (161) barrels of standing fluids were recovered inside the tank battery firewall. The facility measured approximately 35' X 130'. The C-141 form is enclosed in Appendix A.

Groundwater

No water wells were listed within Section 10. According to the NMOCD groundwater map, the average depth to groundwater in this area is greater than 100' below surface. The Geology and Groundwater Resources

Tetra Tech



of Eddy County, New Mexico (Report 3) well report data is shown in Appendix B.

Regulatory

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

Soil Assessment and Analytical Results

On December 29, 2010, Tetra Tech personnel inspected and sampled the spill area. Prior to sampling, COG had excavated the spill area to a depth from 1.0' to 3.0' below surface and backfilled the excavations. Tetra Tech collected samples below the clean backfilled material. A total of six (6) auger holes (AH-1 through AH-6) 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, AH-2 samples were above the allowed RRAL for TPH and BTEX and declined below the RRAL at 3.0' and the chloride concentration declined with depth to 940 mg/kg. All remaining auger holes had chloride levels that ranged from <200 mg/kg to 1,270 mg/kg. Samples at 0-1.0' from AH-3, AH-4 and AH-6 showed chloride concentrations of 718 mg/kg, 1,270 mg/kg and 988 mg/kg, respectively. Deeper samples were not collected due to a dense formation.

Based on the results, Tetra Tech prepared and submitted a work plan to the NMOCD for approval, dated March 1, 2011. Tetra Tech proposed to excavate the area of AH-2 to a depth of approximately 3.0' to 4.0' to remove the TPH and BTEX above the RRAL. In addition, backhoe trenches were



proposed in the areas of AH-2, AH-3, AH-4 and AH-6 to collect deeper samples to define the chloride extents, if accessible.

Corrective Action

On March 24, 2011, the proposed work plan was performed and excavated the area of AH-2 to a depth of 3.0' below surface. As proposed, the backhoe trenches were installed in the areas of AH-2 (T-4), AH-3 (T-3), AH-4 (T-2) and AH-6 (T-1). Samples were collected to define the chloride extents. The sampling results are shown in Table 1. Referring to Table 1, all of the trench locations showed declining chloride concentrations with depth, except the area of AH-6 (T-1). Auger hole AH-6 (T-1) showed elevated chloride concentrations from 1.0' (5,580 mg/kg) to 7.0' (6,500 mg/kg) and not vertically defined.

On March 26, 2012, Tetra Tech installed a soil boring to define the chloride extents. The soil boring results are shown in Table 1. Referring to Table 1, the chloride concentrations significantly declined at 4-5' below surface.

Based on the results, Tetra Tech personnel supervised the excavation of area of AH-6 to a depth of 3.0' to 4.0' below surface. Once excavated to the appropriate depth, the excavation bottom was capped with a 40 mil liner and backfilled with clean material to grade. The excavated areas and depths are highlighted in Table 1 and shown on Figure 4. All of the excavated soil was transported to the R360 facility for proper disposal.

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,

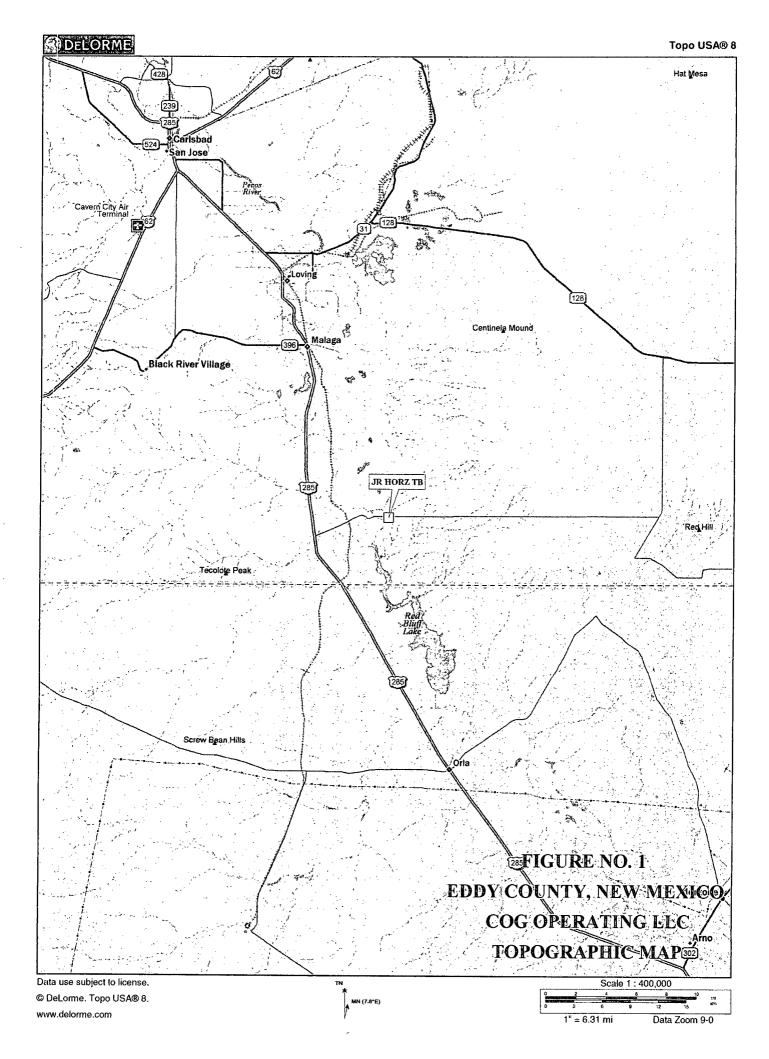
TETRA/TECH

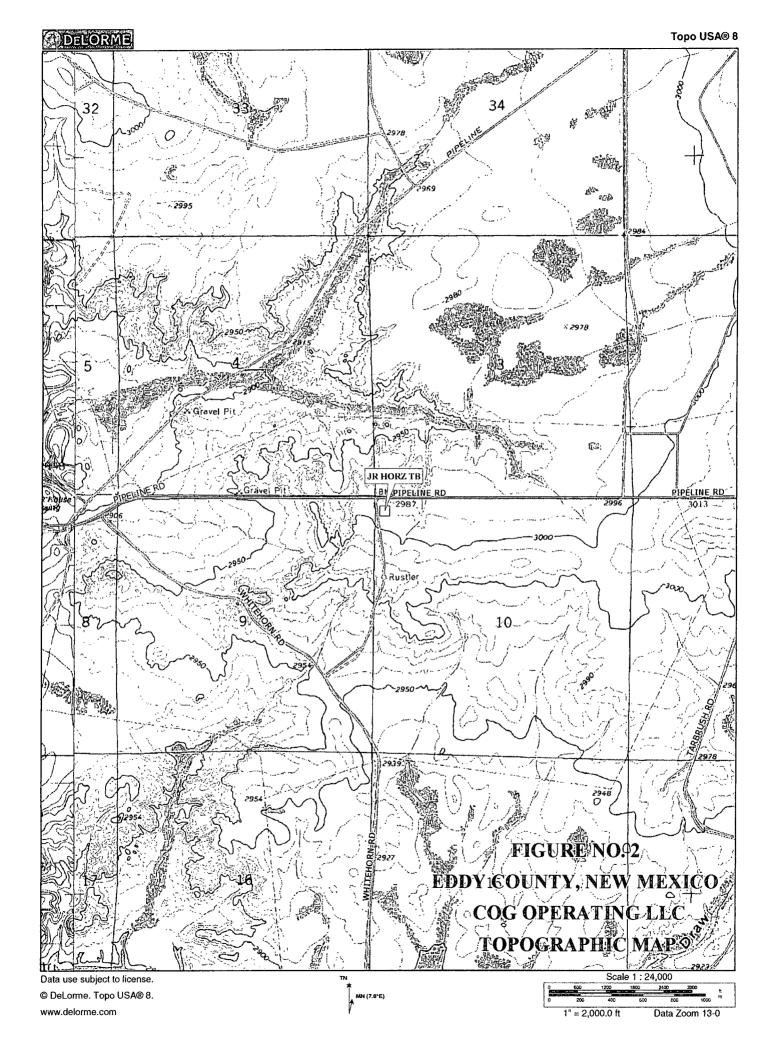
Ike Tavarez

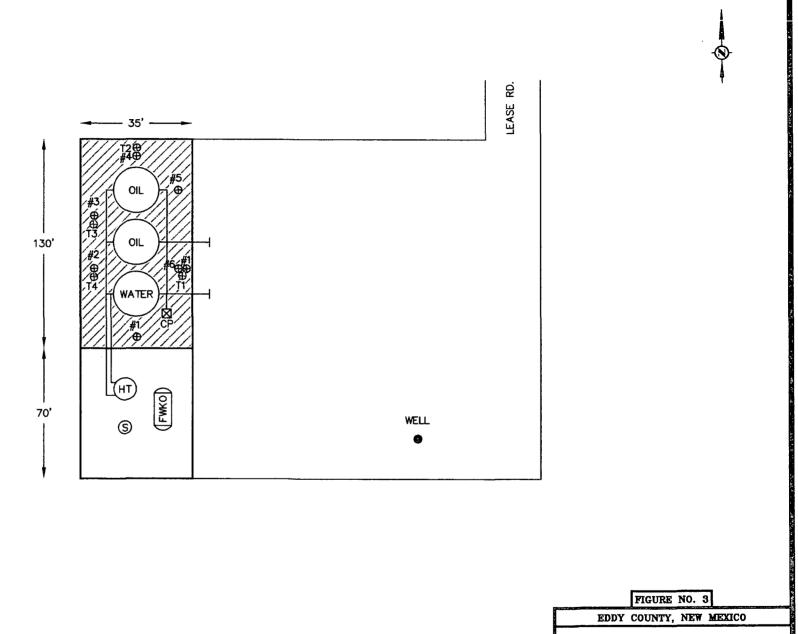
Project Manager

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

Figures







SPILL AREA

AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
TRENCH LOCATIONS

NOT TO SCALE

COG OPERATING LLC DATE: 4/5/2011 JR HORZ TB SPILL ASSESSMENT MAP

TETRA TECH, INC. MIDLAND, TEXAS

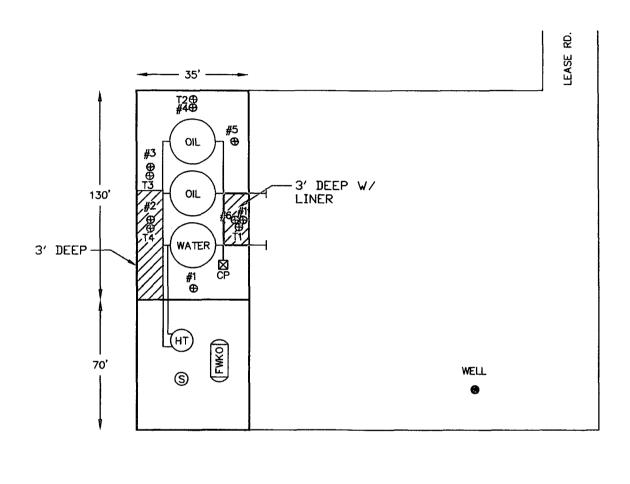


FIGURE NO. 4 EDDY COUNTY, NEW MEXICO COG OPERATING LLC DATE: 12/4/2012 JR HORZ TB EXCAVATION AREAS & DEPTHS MAP TETRA TECH, INC. MIDLAND, TEXAS

NOT TO SCALE

AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
TRENCH LOCATIONS INSTALLED LINER

EXCAVATED AREA

Tables

Table 1
COG Operating LLC.
JR's Horz Federal Tank Battery
EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soi	l Status	TF	H (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
ΙĎ	Date	Depth (ft)	(DED)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	12/29/2010	0-1'	2'	X		<2.00	<50.0	<50.0	-	-	-	-	408
		1-1.5'	2'	Х		-	-	-	-	-	-	-	511
		2-2.5'	2'	Х		-	-	-	-	-	-	-	367
		3-3.5'	2,	Х		-	-	-	-	-	<u>-</u>	-	475
AH-2	12/29/2010	0-1	*; 1' ;		x	4,410	6,420	10,830	8.26	42.4	29.2	86.8	1,200
		1-1.5	1!		X	6,760	.9,700	16,460	9.91	48.5	30.5	86	1,350
		· 2-2.5'	'∴ু † ি		X	5,720	22,300	28,020	11.9	121,	60.3	176	1,030
		3-3.5'	1'	Х		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	940
T-4	3/24/2011	5'				-	-		-	-	-	-	1,080
		7'					-	-	44	-	-	-	724
AH-3	12/29/2010	0-1'	1'	Х		183	398	581	<0.100	0.337	0.864	3.7	718
T-3	3/24/2011	1'				-	-	-	-	-	-	-	<200
		3'				-	-	-	-	-	-	-	1,070
		5'				-	-	-	-	-	-	-	710
		7'				-	-	-	-	-	-	-	553
AH-4	12/29/2010	0-1'	1'	Х		27.9	195.0	222.9	-	-	-	-	1,270
T-2	3/24/2011	1'				-	-	-		-	_	-	1,980
		3'				-	-	-	-	-	-	-	1,070
		5'				-	_	-	-	-	-		1,010
		7'				-	-	-	-	-	-	-	340

Table 1
COG Operating LLC.
JR's Horz Federal Tank Battery
EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soi	l Status	TF	H (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride	
ID	Date	Depth (ft)	(DED)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	
AH-5	12/29/2010	0-1'	1'	Х		1,910	1,870	3,780	<0.200	4.03	4.88	14.3	<200	
AH-6	12/29/2010	0-1'	1'	Х		21.1	364.0	385.1	-	-	-	-	988	
T-1	3/24/2011			学校人	X	ac To	Angles	· · · · · · · · · · · · · · · · · · ·					5,580	
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		5'				-	-	-	-	_	-	-	3,900	
		7'				-	-		-	-	-	-	6,500	
BH-1	3/26/2012		100 AND 110		X		\$ 28.	- 3		70.70 .35			¥4,620	
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	19	6-7	-	Х		-	-	-	-	-	-	-	497	
	11	9-10	-	Х		-	-	ı	-	-	-	-	526	
	11	14-15	-	Х		-	-	-	-	-	-	-	1,250	
	11	19-20	-	Х		-	-	-	-	-	-	-	241	
	11	24-25	-	Х		-	-	-	-	-	-	-	594	

BEB Below Excavation Bottom

(--) Not Analyzed

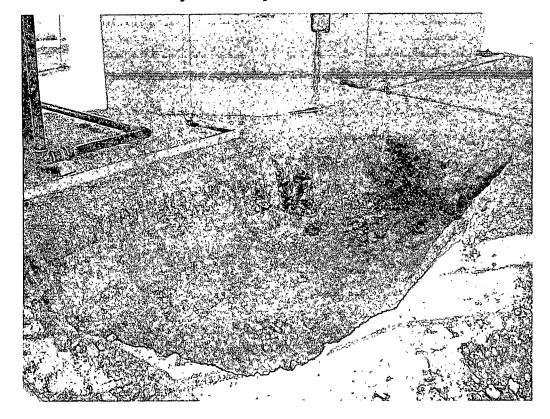
Excavated Depths

_Liner Installed

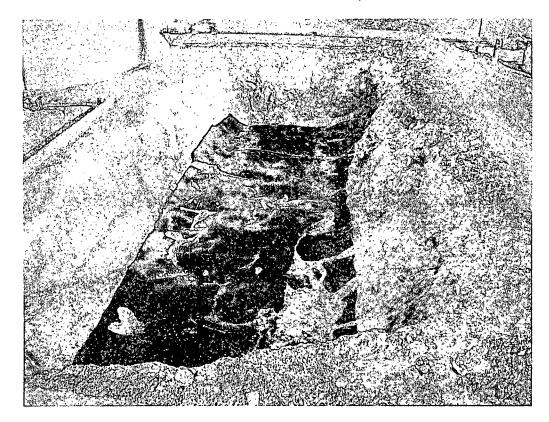
Photos

COG Operating LLC JR's Horz Federal Tank Battery Eddy County, New Mexico





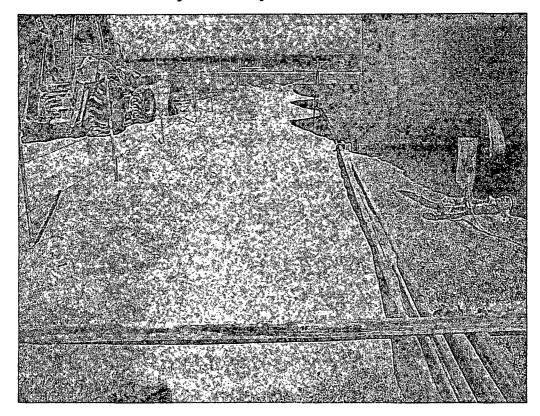
View West - Area of AH-6, BH-1



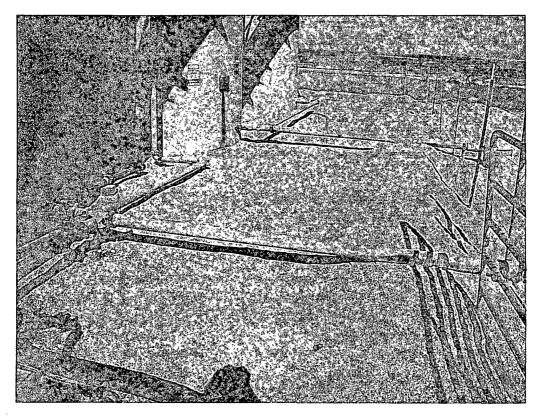
View West - Area of AH-6, BH-1, Liner Installed

COG Operating LLC JR's Horz Federal Tank Battery Eddy County, New Mexico





View North – Area of AH-2, T-4, Backfill



View North - Area of AH-6, BH-1, Backfill

Appendix A

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

State of New Mexico Energy Minerals and Natural Resources

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

RECEIVED

Form C-141 Revised October 10, 2003

MAR 13 2013 ubmit 2 Copies to appropriate
District Office in accordance
with Rule 116 on back side of form

NMOCD ARTES!A

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						OPERA	ГOR	☐ Ir	itial Report	\boxtimes	Final Report
Name of Co	mpany	COG	Operati	ng LLC		Contact	Pa	at Ellis			
Address	550 W. T	'exas, Suite	1300 Mic	lland, Texas 79	701	Telephone N	No. (432)	230-0077			
Facility Nar	ne JR's H	orz Federal	Tank Bat	tery		Facility Typ	e Tanl	k Battery			
Surface Ow	ner: Feder	al		Mineral C)wner			Leas	e No. NMNN	1-9217	7
			·	LOCA	TIO	N OF REI	LEASE				-
Unit Letter	Section	Township	Range	Feet from the		/South Line	Feet from the	East/West Lin	ne County		
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								Terry Gregst	ton—BLM		
By Whom? Jo	osh Russo					Date and H	lour 11/11/2010	8:24 a.m.		*	
Was a Watercourse Reached?							lume Impacting t				
			Yes 🛚	No		N/A					
If a Watercou	ırse was Im	pacted, Descr	be Fully.*	:							
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		l storage tanks	due to wa	iter flow from JR	's Horz	#1 well backs	ide. JR's Horz#1	l well has had t	ubing and casi	ng shut	in until
further notice	.										
Describe Are	a Affected	and Cleanup A	Action Tak	 en.*				· · · · · · · · · · · · · · · · · · ·			
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or the enviror	ment. In a	ddition, NMC	CD accep	tance of a C-141:	report d	loes not relieve	e the operator of r	esponsibility fo	or compliance w	vith anv	v other
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E-mail Addre			ch.com			Conditions of	Approval:		Attached		
Date: Di	13-1	3	Phone:	(432) 682-4559							

^{*} Attach Additional Sheets If Necessary

District I 1625 N. French Dr., Hobbs, NM 88240 District II 1301 W. Grand Avenue, Artesia, NM 88210 District III
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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

	Release Notification and Corrective Action											
						OPERA?			⊠ Initia	al Report		Final Report
Name of Co		COG OP				Contact		at Ellis				
Address				dland, TX 7970	<u> </u>	Telephone N		230-007				
Facility Na	ne .	IR's Horz Fo	deral la	nk Battery	1	Facility Typ	e i ani	k Batter	<u>y</u>		···	
Surface Ow	ner Fed	eral		Mineral C	wner		Lease N	Io. NMN	M-92	2177		
				LOCA	TIO	n of rei	LEASE					
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☐ Yes ☐ No ☐ Not Requ									atcher-O			
By Whom? Josh Russo						Date and H	our 11/11/2010		egston—E m.	LM		
Was a Water	course Reac	_	V	N.			lume Impacting t					
	☐ Yes ☒ No a Watercourse was Impacted, Describe Fully.*											
If a Watercou	irse was Im	pacted, Descri	be Fully.*	i								
Describe Cau	se of Proble	m and Reme	ial Action	Taken.*								
Oil overflowe	ed out of oil	storage tanks	due to we	ter flow from JR'	s Horz	#1 well backs	ide. JR's Horz#1	l well ha	s had tubi	ng and casin	ig shu	t in until
further notice												
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federal, state,	or local law	/s and/or regu	lations.				OIL COM	IEDY/	ATTON	DIVITOR	VX f	
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Signature:			_(_	7								
Printed Name		Josh	Russo	-		Approved by	District Superviso	or: 				
Title:	· · · · · · · · · · · · · · · · · · ·	HSE Co	ordinator			Approval Dat	e:	E	xpiration I	Date:		
E-mail Addre	ss:	jrusso@concl	oresource	s.com		Conditions of	Approval:			Attached	П	
	16/2010	Ph	one:	132-212-2399								

^{*} Attach Additional Sheets If Necessary

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG - Jr's Horz Federal Tank Battery Eddy County, New Mexico

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	Ι			_	34	35		36	31	32	33	34	35	36	31		2	33		34	35
31	32		33																		

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Appendix C

Report Date: April 12, 2012 Work Order: 12032802 Page Number: 1 of 2

Summary Report

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

Report Date: April 12, 2012

Work Order: 12032802

Project Location: Eddy Co., NM Project Name: COG/Jr. Horz Project Number: 114-6400743

			Date	Time	\mathbf{Date}
Sample	Description	Matrix	Taken	Taken	Received
292499	BH-1 @ T-1 (AH-6) 0-1'	soil	2012-03-26	00:00	2012-03-27
292500	BH-1 @ T-1 (AH-6) 2-3'	soil	2012-03-26	00:00	2012-03-27
292501	BH-1 @ T-1 (AH-6) 4-5'	soil -	2012-03-26	00:00	2012-03-27
292502	BH-1 @ T-1 (AH-6) 6-7'	soil	2012-03-26	00:00	2012-03-27
292503	BH-1 @ T-1 (AH-6) 9-10'	soil	2012-03-26	00:00	2012-03-27
292504	BH-1 @ T-1 (AH-6) 14-15'	soil	2012-03-26	00:00	2012-03-27
292505	BH-1 @ T-1 (AH-6) 19-20'	soil	2012-03-26	00:00	2012-03-27
292506	BH-1 @ T-1 (AH-6) 24-25'	soil	2012-03-26	00:00	2012-03-27

Sample: 292499 - BH-1 @ T-1 (AH-6) 0-1'

Param	Flag	Result	Units	RL
Chloride		4620	mg/Kg	4

Sample: 292500 - BH-1 @ T-1 (AH-6) 2-3'

Param	Flag	Result	Units	RL
Chloride		4860	mg/Kg	4

Sample: 292501 - BH-1 @ T-1 (AH-6) 4-5'

Param	Flag	Result	Units	RL
Chloride		864	mg/Kg	4

Report Date: April 12, 2012		Work Order: 12032802	Pa	ge Number: 2 of 2
Sample: 292502 - BH-1 @	T-1 (AH-6)	6-7'		
Param	Flag	Result	Units	RL
Chloride		497	mg/Kg	4
Sample: 292503 - BH-1 @	T-1 (AH-6)	9-10'		
Param	Flag	Result	Units	RL
Chloride		526	mg/Kg	4
Sample: 292504 - BH-1 @	T-1 (AH-6)	14-15'		
Param	Flag	Result	Units	RL
Chloride		1250	mg/Kg	4
Sample: 292505 - BH-1 @	T-1 (AH-6)	19-20'		
Param	Flag	Result	Units	RL
Chloride		241	mg/Kg	4
Sample: 292506 - BH-1 @	T-1 (AH-6)	24-25'		
Param	Flag	Result	Units	RL
Chloride	<u> </u>	594	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E

5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

El Paso. Midland. Texas 79703 Texas 75006 Carroliton.

Texas 79922

800-378-1296 806-794-1296 915-585-3443

FAX 915 -585 -4944 FAX 432-689-6313

432-689-6301 972-242-7750

E-Mail: tab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

DBE NELAP DoD LELAP Oklahoma ISO 17025 WBE HUB NCTRCA Kansas

Analytical and Quality Control Report (Corrected Report)

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

Report Date: April 12, 2012

Work Order: 12032802

Project Location: Eddy Co., NM Project Name:

Project Number:

COG/Jr. Horz 114-6400743

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
292499	BH-1 @ T-1 (AH-6) 0-1'	soil	2012-03-26	00:00	2012-03-27
292500	BH-1 @ T-1 (AH-6) 2-3'	soil	2012-03-26	00:00	2012-03-27
292501	BH-1 @ T-1 (AH-6) 4-5'	soil	2012-03-26	00:00	2012-03-27
292502	BH-1 @ T-1 (AH-6) 6-7'	soil	2012-03-26	00:00	2012-03-27
292503	BH-1 @ T-1 (AH-6) 9-10'	soil	2012-03-26	00:00	2012-03-27
292504	BH-1 @ T-1 (AH-6) 14-15'	soil	2012-03-26	00:00	2012-03-27
292505	BH-1 @ T-1 (AH-6) 19-20'	soil	2012-03-26	00:00	2012-03-27
292506	BH-1 @ T-1 (AH-6) 24-25'	soil	2012-03-26	00:00	2012-03-27

Report Corrections (Work Order 12032802)

• 4/5/12: Added chloride test for samples 292505-6.

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 12 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Dr. Blair Leftwich, Director

Michael april

Dr. Michael Abel, Project Manager

Report Contents

Case Narrative	4
Analytical Report	5
Sample 292499 (BH-1 @T-1 (AH-6) 0-1')	5
Sample 292500 (BH-1 @T-1 (AH-6) 2-3')	
Sample 292501 (BH-1 @T-1 (AH-6) 4-5')	5
Sample 292502 (BH-1 @T-1 (AH-6) 6-7')	
Sample 292503 (BH-1 @T-1 (AH-6) 9-10')	
Sample 292504 (BH-1 @T-1 (AH-6) 14-15')	
Sample 292505 (BH-1 @T-1 (AH-6) 19-20')	6
Sample 292506 (BH-1 @T-1 (AH-6) 24-25')	
Method Blanks	8
QC Batch 89957 - Method Blank (1)	8
QC Batch 90175 - Method Blank (1)	
4.0 24004 00270 120040 20044 (2) 1171 1171 1711 1711 1711 1711 1711 17	_
Laboratory Control Spikes	9
QC Batch 89957 - LCS (1)	ç
QC Batch 90175 - LCS (1)	
QC Batch 89957 - MS (1)	9
QC Batch 90175 - MS (1)	
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QC Batch 89957 - ICV (1)	
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Case Narrative

Samples for project COG/Jr. Horz were received by TraceAnalysis, Inc. on 2012-03-27 and assigned to work order 12032802. Samples for work order 12032802 were received intact at a temperature of 4.2 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	76274	2012-04-02 at 09:58	89957	2012-04-03 at 10:58
Chloride (Titration)	SM 4500-Cl B	76516	2012-04-11 at 09:17	90175	2012-04-12 at 09:18

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 12032802 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.

114-6400743

Work Order: 12032802 COG/Jr. Horz

Page Number: 5 of 12 Eddy Co., NM

Analytical Report

Sample: 292499 - BH-1 @ T-1 (AH-6) 0-1'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

89957

Date Analyzed:

2012-04-03

Analyzed By: AR

Prep Batch: 76274 Sample Preparation:

2012-04-02

Prepared By: AR

RL

Parameter Chloride

Cert Result 4620

Units mg/Kg Dilution RL100 4.00

Sample: 292500 - BH-1 @ T-1 (AH-6) 2-3'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

89957

Date Analyzed:

2012-04-03

Analyzed By: AR

Prep Batch:

76274

Sample Preparation: 2012-04-02 Prepared By: AR

RL

Result 4860

Parameter Flag Cert Chloride

Flag

Units

mg/Kg

Dilution RL100 4.00

Sample: 292501 - BH-1 @ T-1 (AH-6) 4-5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch:

89957 76274

Date Analyzed: Sample Preparation:

2012-04-03 2012-04-02 Analyzed By: ARPrepared By: AR

RL

Result Parameter Cert Units Dilution RLFlag Chloride 864 mg/Kg 50 4.00

 Report Date: April 12, 2012
 Work Order: 12032802
 Page Number: 6 of 12

 114-6400743
 COG/Jr. Horz
 Eddy Co., NM

Sample: 292502 - BH-1 @ T-1 (AH-6) 6-7'

Laboratory: Midland

Analytical Method: SM 4500-Cl B Prep Method: N/A Analysis: Chloride (Titration) QC Batch: 89957 Date Analyzed: 2012-04-03 Analyzed By: AR Prep Batch: 76274 Sample Preparation: 2012-04-02 Prepared By: AR

Sample: 292503 - BH-1 @ T-1 (AH-6) 9-10'

Laboratory: Midland

Chloride (Titration) Analysis: Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 89957 Date Analyzed: 2012-04-03 Analyzed By: AR Prep Batch: Sample Preparation: Prepared By: 76274 2012-04-02 AR

Sample: 292504 - BH-1 @ T-1 (AH-6) 14-15'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 89957 Date Analyzed: 2012-04-03 Analyzed By: AR Prep Batch: Sample Preparation: Prepared By: 76274 2012-04-02 AR

Sample: 292505 - BH-1 @ T-1 (AH-6) 19-20'

Laboratory: Midland

Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 90175 Date Analyzed: 2012-04-12 Analyzed By: AR Prep Batch: 76516 Sample Preparation: 2012-04-11 Prepared By: AR

Work Order: 12032802

Page Number: 7 of 12

114-6400743

COG/Jr. Horz

Eddy Co., NM

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			241	mg/Kg	50	4.00

Sample: 292506 - BH-1 @ T-1 (AH-6) 24-25'

Laboratory: N

Midland

Analysis: Chloride (Titration)

Analytical Method: SM 4500-Cl B

Prep Method: N/A

QC Batch: 9 Prep Batch: 7

90175 76516 Date Analyzed: 2012-04-12 Sample Preparation: 2012-04-11 Analyzed By: AR Prepared By: AR

RL

114-6400743

Work Order: 12032802 COG/Jr. Horz

Page Number: 8 of 12 Eddy Co., NM

Method Blanks

Method Blank (1)

QC Batch: 89957

QC Batch: Prep Batch:

89957 76274

Date Analyzed: QC Preparation: 2012-04-03 2012-04-02 Analyzed By: AR

Prepared By: AR

MDL

Parameter Chloride

Flag

Cert

Result < 3.85

Units mg/Kg RL4

Method Blank (1)

QC Batch: 90175

QC Batch: Prep Batch: 76516

90175

Date Analyzed: QC Preparation:

 ${\bf Cert}$

2012-04-12 2012-04-11

Analyzed By: AR

Prepared By: AR

Parameter

Flag Chloride

MDL Result

< 3.85

Units mg/Kg

RL $\overline{4}$

114-6400743

Work Order: 12032802 COG/Jr. Horz

Page Number: 9 of 12 Eddy Co., NM

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:

Date Analyzed:

2012-04-03

Analyzed By: AR

Prep Batch: 76274

QC Preparation: 2012-04-02

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			106	mg/Kg	1	100	< 3.85	106	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	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			99.8	mg/Kg	1	100	< 3.85	100	85 - 115	6	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: 90175

Prep Batch: 76516

Date Analyzed: QC Preparation: 2012-04-11

2012-04-12

Analyzed By: AR

Prepared By: AR

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			95.5	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			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			100	mg/Kg	ī	100	< 3.85	100	85 - 115	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: 292536

QC Batch: 89957 Prep Batch: 76274 Date Analyzed: 2012-04-03 2012-04-02 QC Preparation:

Analyzed By: AR Prepared By: AR

114-6400743

Work Order: 12032802

COG/Jr. Horz

Page Number: 10 of 12

Eddy Co., NM

			MS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			14300	mg/Kg	100	10000	5080	92	79.4 - 120.6

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

			MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			15000	mg/Kg	100	10000	5080	99	79.4 - 120.6	5	20

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

Matrix Spike (MS-1)

QC Batch: 90175 Prep Batch: 76516 Spiked Sample: 292567

Date Analyzed: QC Preparation: 2012-04-11

2012-04-12

Analyzed By: AR

Prepared By: AR

			MS			Spike	Matrix		Rec.
Param	${f F}$	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride			10200	mg/Kg	100	10000	<385	102	79.4 - 120.6

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			10600	mg/Kg	100	10000	<385	106	79.4 - 120.6	4	20

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

Report Date: April 12, 2012 114-6400743

Work Order: 12032802 COG/Jr. Horz

Calibration Standards

Standard (ICV-1)

QC Batch: 89957

Date Analyzed: 2012-04-03

Analyzed By: AR

Page Number: 11 of 12

Eddy Co., NM

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-04-03

Standard (CCV-1)

QC Batch: 89957

Date Analyzed: 2012-04-03

Analyzed By: AR

				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	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	98.9	99	['] 85 - 115	2012-04-03

Standard (ICV-1)

QC Batch: 90175

Date Analyzed: 2012-04-12

Analyzed By: AR

				ICVs	ICVs	ICVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	98.1	98	85 - 115	2012-04-12

Standard (CCV-1)

QC Batch: 90175

Date Analyzed: 2012-04-12

Analyzed By: AR

				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2012-04-12

Report Date: April 12, 2012 Work Order: 12032802 Page Number: 12 of 12 114-6400743 COG/Jr. Horz Eddy Co., NM

Appendix

Report Definitions

Name	Definition
$\overline{ ext{MDL}}$	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
\mathbf{C}	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis

Standard Flags

F Description

- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
- Je Estimated concentration exceeding calibration range.
- Qc Calibration check outside of laboratory limits.
- Qr RPD outside of laboratory limits
- Qs Spike recovery outside of laboratory limits.
- Qsr Surrogate recovery outside of laboratory limits.
 - U The analyte is not detected above the SDL

Attachments

The scanned attachments will follow this page.

Please note, each attachment may consist of more than one page.

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An	aivs	is F	le	C	u	est of Chain of Custody	F	}e)C	0	rd	$oxdampsymbol{\square}$									AGE			L				<u></u>	
								ANALYSIS REQUEST (Circle or Specify Method No.)																					
TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946													35 (Ext. to C35)		Cd Cr Pb Hg Se	6							Chlorides	Dect canne	412/1º @	TDS			
CLIENT NAME: COCT SITE MANAGER: The Taunca							NERS		P		RVATIVE THOD]	TX1005]],	8 8	5			260/624	270/62			And	7	-	ns, pH,			
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LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP	GRAB	Eddy Co., MM SAMPLE IDENTIFICATION	NUMBER OF	FILTERED (Y/N)	HCL	HN03	ICE	BTEX 8021	TPH 8015	PAH 8270	TCI P Met	TCLP Volatiles	TCLP Semi	HC.	GC.MS Vol.	GC,MS Semi. Vol. 8270/625	PCB's 8080	Pest. 808/608	Chloride	Gamma Sp	Alpha Beta (Air)	Major Anions/Cations, pH, TDS			
292499	3/26		S		X	BH-1 CT-1 (AH-6) 0-1	i				X											٠	X						
500						2-3'	1															.	M				_	Ц	
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502						6-7'	l				X											ŀ	X					Ш	
503			floor			9-10'	1				X											ŀ	X					Ш	
504			\prod			14-15'	1				$X \perp$			Ц								Ŀ	X		\perp			\coprod	
505						19-20'	1				X											\perp	X						
506			\coprod			24-25	1				X											\perp	X	X					
507	/					29-30'	1				X																		
											-/																		
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ADDRESS: MIDCAND STATE: ZIP: DATE: TIME: TIME:										IICE Tacaret RUSH Charges Authorized: Yes No																			

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

REMARKS:

SAMPLE CONDITION WHEN RECEIVED:

APR -4 2012

#12032802

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		•				Midland, Tex	Spring St.)5 (Ext. to C35)	C. Pb	운						Chlirides	ere Jeanne	45/16	pM, TDS			
CLIENT NAM	1E:	C_{\square}	-			SITE MANAGE		202	2	Р		ERV/	ATIVE DD		TX1005	Ba	RB			30/624	70/625		13old	7	-	s, pH,			
	PROJECT NO.: PROJECT NAME: 114-64007-13 JR Ho-2				TWO	(N/						MOD.	Is Ag As		les	Volatiles	8240/826	ni. Vof. 82	909/	12.7	ec.	(Air)	אר/Cation						
LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP	GRAB	Edd, SAMPL	Co., MM E IDENTIFICATION	SOUNTHINGS OF COUNTRIES	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015	RCRA Metals Ag	TCLP Metals Ag	TCLP Volatiles	PCI Sermi Volgulies	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608 Pest. 808/608	Chloride	Gamma Spi	Alpha Beta (Air)	Major Anions/Cations,			
292499	3/26		S		X	BH-1 @T-1	AH-6) 0-1	{				X											X						
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505							19-25'	1				X											K						
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Work Order: 11032818 Report Date: March 29, 2011

Summary Report

Tetra Tech 1910 N. Big Spring Street

Midland, TX 79705

Report Date: March 29, 2011

Page Number: 1 of 3

Work Order: 11032818

Project Location: Eddy Co, NM Project Name: COG/Jr Horz Project Number: 114-6400743

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
261862	T-1 1'	soil	2011-03-24	00:00	2011-03-28
261863	T-1 3'	soil	2011-03-24	00:00	2011-03-28
261864	T-1 5'	soil	2011-03-24	00:00	2011-03-28
261865	T-1 7'	soil	2011-03-24	00:00	2011-03-28
261866	T-2 1'	soil	2011-03-24	00:00	2011-03-28
261867	T-2 3'	soil	2011-03-24	00:00	2011-03-28
261868	T-2 5'	soil	2011-03-24	00:00	2011-03-28
261869	T-2 7'	soil	2011-03-24	00:00	2011-03-28
261871	T-3 1'	soil	2011-03-24	00:00	2011-03-28
261872	T-3 3'	soil	2011-03-24	00:00	2011-03-28
261873	T-3 5'	soil	2011-03-24	00:00	2011-03-28
261874	T-3 7'	soil	2011-03-24	00:00	2011-03-28
261877	T-4 5'	soil	2011-03-24	00:00	2011-03-28
261878	T-4 7'	soil	2011-03-24	00:00	2011-03-28

Sample: 261862 - T-1 1'

Param	Flag	Result	Units	RL
Chloride		5580	mg/Kg	4.00

Sample: 261863 - T-1 3'

Param	Flag	Result	Units	RL
Chloride		9060	mg/Kg	4.00

Report Date: March 29, 201	1	Work Order: 11032818	P	age Number: 2 of 3
Sample: 261864 - T-1 5'				
Param	Flag	Result	Units	RL
Chloride		3900	mg/Kg	4.00
Sample: 261865 - T-1 7'				
Param	Flag	Result	Units	RL
Chloride		6500	mg/Kg	4.00
Sample: 261866 - T-2 1'				
Param	Flag	Result	Units	RL
Chloride		1980	mg/Kg	4.00
(
Sample: 261867 - T-2 3'				
Param	Flag	Result	Units	RL
Chloride		1070	mg/Kg	4.00
Sample: 261868 - T-2 5'				
Param	Flag	Result	Units	RL
Chloride		1010	mg/Kg	4.00
Sample: 261869 - T-2 7'				
Param	Flag	Result	Units	RL
Chloride		340	mg/Kg	4.00
Sample: 261871 - T-3 1'				
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 261872 - T-3 3'				
Param	Flag	Result	Units	RL
Chloride	0	1070	mg/Kg	4.00

Report Date: Marc	eh 29, 2011	Work Order: 11032818	I	Page Number: 3 of 3
Sample: 261873	- T-3 5'			
Param	Flag	Result	Units	RL
Chloride		710	mg/Kg	4.00
Sample: 261874	- T-3 7'			
Param	Flag	Result	Units	RL
Chloride		553	mg/Kg	4.00
Sample: 261877	- T-4 5'			
Param	Flag	Result	Units	RL
Chloride		1080	mg/Kg	4.00
Sample: 261878	- T-4 7'			
Param	Flag	Result	Units	RL
Chloride		724	mg/Kg	4.00



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

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

888 • 588 • 3443

806 • 794 • 1296 915 • 585 • 3443 432 • 689 • 6301

FAX 806 • 794 • 1298 FAX 915 • 585 • 4944 FAX 432 • 689 • 6313

6015 Harris Parkway, Suite 110 - Ft Worth, Texas 76132 817 • 201 • 5260

E-Mail: lais@traceanalysis.com

Certifications

WBENC: 237019

HUB:

1752439743100-86536

DBE: VN 20657

NCTRCA

WFWB38444Y0909

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

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

Report Date: March 29, 2011

Work Order: 11032818

Project Location: Eddy Co, NM Project Name: Project Number:

COG/Jr Horz 114-6400743

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
261862	T-1 1'	soil	2011-03-24	00:00	2011-03-28
261863	T-1 3'	soil	2011-03-24	00:00	2011-03-28
261864	T-1 5'	soil	2011-03-24	00:00	2011-03-28
261865	T-1 7'	soil	2011-03-24	00:00	2011-03-28
261866	T-2 1'	soil	2011-03-24	00:00	2011-03-28
261867	T-2 3'	soil	2011-03-24	00:00	2011-03-28
261868	T-2 5'	soil	2011-03-24	00:00	2011-03-28
261869	T-2 7'	soil	2011-03-24	00:00	2011-03-28
261871	T-3 1'	soil	2011-03-24	00:00	2011-03-28
261872	T-3 3'	soil	2011-03-24	00:00	2011-03-28
261873	T-3 5'	soil	2011-03-24	00:00	2011-03-28

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
261874	T-3 7'	soil	2011-03-24	00:00	2011-03-28
261877	T-4 5'	soil	2011-03-24	00:00	2011-03-28
261878	T-4 7'	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 10 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

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

Case Narrative

Samples for project COG/Jr Horz were received by TraceAnalysis, Inc. on 2011-03-28 and assigned to work order 11032818. Samples for work order 11032818 were received intact at a temperature of 3.6 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	67743	2011-03-28 at 10:16	79844	2011-03-29 at 10:16
Chloride (Titration)	SM 4500-Cl B	67743	2011-03-28 at 10:16	79845	2011-03-29 at 10:17

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 11032818 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: March 29, 2011 114-6400743

Work Order: 11032818 COG/Jr Horz

Page Number: 4 of 10 Eddy Co, NM

Analytical Report

Sample: 261862 - T-1 1'

Laboratory:

Midland

Chloride (Titration) Analysis:

79844

Analytical Method:

SM 4500-Cl B 2011-03-29

Prep Method: N/A Analyzed By: AR.

QC Batch: Prep Batch:

67743

Date Analyzed: Sample Preparation:

2011-03-28

Prepared By: AR

RL

Parameter Chloride

Result 5580

Units mg/Kg Dilution 100

RL4.00

Sample: 261863 - T-1 3'

Laboratory:

Midland

67743

Analysis: QC Batch:

Prep Batch:

Chloride (Titration) 79844

Flag

Flag

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2011-03-29

2011-03-28

Prep Method: N/A

Analyzed By: ARPrepared By: AR

RL

Parameter Chloride

Result 9060

Units mg/Kg Dilution 100

RL4.00

Sample: 261864 - T-1 5'

Laboratory:

Prep Batch:

Midland

67743

Analysis: QC Batch: 79844

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-03-29

Prep Method: N/A Analyzed By:

Parameter

Flag

Sample Preparation:

2011-03-28

AR Prepared By: AR

RL

Chloride

Result 3900

Units mg/Kg Dilution 100

RL4.00

Sample: 261865 - T-1 7'

Laboratory:

Prep Batch:

Midland

67743

Analysis: 79844 QC Batch:

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation: SM 4500-Cl B 2011-03-29

2011-03-28

Prep Method: N/AAnalyzed By: AR Prepared By: AR

continued . . .

Report Date 114-6400743	e: March 29, 2011	Work Order: 11 COG/Jr Ho	Page Number: 5 of 1 Eddy Co, NM		
sample 2618	65 continued				
Parameter	Flag	RL . Result	Units	Dilution	RL
D	Dl	RL	11	Dilection	DТ
Parameter Chloride	Flag	Result 6500	Units mg/Kg	Dilution 100	4.00
Sample: 26	31866 - T-2 1'				
Laboratory:	Midland		•		
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation	2011-03-28	Prepared By:	AR
_		RL			
Parameter Chloride	Flag	Result 1980	Units mg/Kg	Dilution 100	$\frac{\text{RL}}{4.00}$
Sample: 26	31867 - T-2 3'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	m AR
Prep Batch:	67743	Sample Preparation	2011-03-28	Prepared By:	AR
_	_	RL			~-
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1070	mg/Kg	100	4.00
Sample: 26	51868 - T-2 5'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79844	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR.
D	D)	RL Daniel	TT- 14-	D3. Gara	D.
Parameter	Flag	Result	Units	Dilution	RL
Chloride	· · · · · · · · · · · · · · · · · · ·	1010	mg/Kg	100	4.00

Report Date 114-6400743	:: March 29, 2011	Work Order: 110 COG/Jr Ho		Page Number: 6 Eddy C	
Sample: 26	1869 - T-2 7'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79844 67743	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-29 2011-03-28	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		340	ng/Kg	50	4.00
Sample: 26	1871 - T-3 1'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79844 67743	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-29 2011-03-28	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter Chloride	Flag	RL Result <200 r	Units ng/Kg	Dilution 50	RL 4.00
Sample: 26	1872 - T-3 3'				
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79844 67743	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-29 2011-03-28	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter Chloride	Flag	Result 1070 1	Units ng/Kg	Dilution 50	RL 4.00
Sample: 26 Laboratory: Analysis:	1873 - T-3 5' Midland Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch: Prep Batch:	79845 67743	Date Analyzed: Sample Preparation:	2011-03-29 2011-03-28	Analyzed By: Prepared By:	AR AR
-		RL			
Parameter Chloride	Flag	Result 710 I	Units ng/Kg	Dilution 50	$\frac{\mathrm{RL}}{4.00}$

Report Date 114-6400743	:: March 29, 2011	Work Order: 110 COG/Jr Ho		Page Number: Eddy C	
Sample: 26	1874 - T-3 7'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	79845	Date Analyzed:	2011-03-29	Analyzed By:	AR
Prep Batch:	67743	Sample Preparation:	2011-03-28	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		553	mg/Kg	50	4.00
Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79845 67743	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2011-03-29 2011-03-28	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride			mg/Kg	100	4.00
Sample: 26 Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 79845 67743	Analytical Method: Date Analyzed: Sample Preparation: RL	SM 4500-Cl B 2011-03-29 2011-03-28	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	Result	Units	Dilution	RL
Chloride		724	mg/Kg	50	4.00
Method Bla	ank (1) QC Batch: 79844				
QC Batch:	79844	Date Analyzed: 2011-	-03-29	Analyzed By:	AR
Prep Batch:	67743	QC Preparation: 2011-	-03-28	Prepared By:	AR
		MDL			
Parameter	Flag	Result		Units	RL
Chloride		< 3.85		mg/Kg	4

Report Date: March 29, 2011

114-6400743

Work Order: 11032818 COG/Jr Horz

Page Number: 8 of 10

Eddy Co, NM

Method Blank (1)

QC Batch: 79845

QC Batch:

79845

Date Analyzed:

2011-03-29

Analyzed By: AR

Prep Batch:

67743

QC Preparation:

2011-03-28

Prepared By: AR

MDL

		MIDL		
Parameter	Flag	Result	Units	RL
Chloride		<3.85	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:

79844

Date Analyzed:

2011-03-29

Analyzed By: AR

Prep Batch:

67743

QC Preparation:

2011-03-28

Prepared By:

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	98.8	mg/Kg	1	100	< 3.85	99	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	104	mg/Kg	1	100	< 3.85	104	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:

79845

Date Analyzed:

2011-03-29

Analyzed By: AR

Prep Batch: 67743

QC Preparation: 2011-03-28 Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	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.	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: 261872

QC Batch:

79844

Date Analyzed:

2011-03-29

Analyzed By: AR Prepared By: AR

Prep Batch: 67743

QC Preparation:

2011-03-28

Report Date: March 29, 2011

114-6400743

Work Order: 11032818 COG/Jr Horz

Page Number: 9 of 10

Eddy Co, NM

Param		MS Result Units			Spike Amount		trix sult	Rec.	Rec. Limit
Chloride	119	$\begin{array}{ccc} & \text{Result} & \text{Units} & \text{Dil.} \\ \hline & 11900 & \text{mg/Kg} & 100 \\ \end{array}$		100	10000	10	070	108	80 - 120
Percent recovery is base	d on the spike result.	RPD is	based on	the spike ar	nd spike du	plicate r	esult.		
	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	12200	mg/Kg	100	10000	1070	111	80 - 120	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: 261884

QC Batch:

79845

Date Analyzed:

2011-03-29

Analyzed By: AR

Prepared By: AR

Prep Batch: 67743

QC Preparation: 2011-03-28

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	10500	mg/Kg	100	10000	<385	102	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	10800	mg/Kg	100	10000	<385	105	80 - 120	3	20

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

Standard (ICV-1)

QC Batch: 79844

Date Analyzed: 2011-03-29

Analyzed By: AR

			ICVs True	ICVs Found	ICVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	93.1	93	85 - 115	2011-03-29

Standard (CCV-1)

QC Batch: 79844

Date Analyzed: 2011-03-29

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	107	107	85 - 115	2011-03-29

Report Da 114-640074	te: March 29, 2	2011	Wo	ork Order: 1103 COG/Jr Hora	Page Number: 1 Eddy C							
Standard	(ICV-1)											
QC Batch:	79845	845 Date Analyzed: 2011-03-29					lyzed By: AR					
Param Chloride	Flag	Units mg/Kg	ICVs True Conc. 100	ICVs Found Conc. 98.9	ICVs Percent Recovery	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-29					
Standard	(CCV-1)											
QC Batch:	79845		Date Ana	lyzed: 2011-03	3-29	Anal	yzed By: AR					
Param Chloride	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits 85 - 115	Date Analyzed 2011-03-29					
Unioride		mg/Kg 100 101 101			101	85 - 115	2011-03-29					

8186801/: # work Order #: 11032818

Analysis Request of Chain of Custody Record												PAGE	:		1	OF:		2			
7 11 12 1 3 10 1 10 4 40	1						1				(Ci					JEST thod	No.)				
TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946										d Vr Pd Hg Se								TDS			
CLIENT NAME:	SITE MANAGER:	82	F		ERV/	ATIVE	11	TX1005	Ba Cd				0/624	0/625				Æ			
PROJECT NO.: PROJECT NO.:	AME: I SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	-					TPH 8015 MOD.	als Ag As	2	TCLP Volatiles TCLP Semi Volatiles		GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625 PCB's 8080/808	Pest, 808/608	Chloride Germa Spec.	Alpha Beta (Air)	PLM (Asbestos) Major Anions/Cations,			
LAB I.D. DATE TIME WATER OF SHAPE		N I	털	HNO3	힐	NONE		F F	E E		현호	ž	OC.		Pess	हैं है	₽ P	를 를		\perp	$oldsymbol{\perp}$
261862 3/24 5 x	T-1				Х												Ц				
863	T-1 3'				1											X	Ш				
8764	=/ 5'							floor								X					
865	=/ 7'															X					
87010	=2 1'															X					
867	=2 3'															X					
868	-2 5															Y					
869	~2 7'															X					
870 7	-2 8'															X					
	r=? /'	4			Y											X					
Thetashout 1	ne: 1/00 RECEIVED BY: (Signature)		1	Date: Time:					11		Y: (Pris	11	<u> </u>	دکک	<u>.</u>	 	Tin		3//	28/	<u> </u>
									FEDE	X	IPPED		BUS				AIRB OTH	_			
	Time:								ETRA	TECH	CON	TACT	PERS	ON:				Result	by:		
ADDRESS: CITY: STATE: TX CONTACT: PHONE:	ZIP:	TIME		12:	. 2	0		-			Ž.	-		_	_			RUSH Author Ye:	ized:	es Mo	,
SAMPLE CONDITION WHEN RECEIVED:	REMARKS: WSh	\overline{u}	j		Ŷ	ر ما	h		N	<u>li</u>	di	ع لا	w	ل	·						

Analysis Request of Chain of Custody Record PAGE: OF: 2 ANALYSIS REQUEST (Circle or Specify Method No.) TETRA TECH Pb Hg Se Pd Hg Se (Ext. to C35) 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946 ბ ≯ 8015 MOD. TX1005 8 8 GC.MS Val. 8240/8260/624
GC.MS Semi. Vol. 8270/625
PCB's 8080/608
Pest. 808/608 CLIENT NAME: SITE MANAGER: PRESERVATIVE 8 8 **METHOD** PROJECT NAME: PROJECT NO .: FILTERED (Y/N)
HGL
HNO3 LAB I.D. MATRIX COMP. GRAB ICE NONE DATE TIME SAMPLE IDENTIFICATION NUMBER 2141872 873 874 876 248 877 878 RELINQUISHED BY: (Signatu RECEIVED BY: (Signature) Time RECEIVED BY: (Signature) AIRBILL #: FEDEX BUS Time: RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) TETRA TECH CONTACT PERSON: Results by: RECEIVING LABORATORY: RECEIVED BY: (Signature) The -RUSH Charges ZIP: 7.20 CONTACT: PHONE: DATE: TIME: SAMPLE CONDITION WHEN RECEIVED REMARKS: 3,6°C

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

Report Date: January 13, 2011 Work Order: 11010504 Page Number: 1 of 3

Summary Report

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

Report Date: January 13, 2011

Work Order: 11010504

Project Location: Eddy County, NM Project Name: COG/JR Horz Project Number: 114-6400743

			\mathbf{Date}	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
254664	AH-1 0-1' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254665	AH-1 1-1.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254666	AH-1 2-2.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254667	AH-1 3-3.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254668	AH-2 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254669	AH-2 1-1.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254670	AH-2 2-2.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254671	AH-2 3-3.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254672	AH-3 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254673	AH-4 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254674	AH-5 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254675	AH-6 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05

	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)
254664 - AH-1 0-1' 2' BEB					< 50.0	< 2.00
254668 - AH-2 0-1' 1' BEB	8.26	42.4	29.2	86.8	6420	4410
254669 - AH-2 1-1.5' 1' BEB	9.91	48.5	30.5	86.0	9700	6760
254670 - AH-2 2-2.5' 1' BEB	11.9	121	60.3	176	22300	5720
254671 - AH-2 3-3.5' 1' BEB	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00
254672 - AH-3 0-1' 1' BEB	< 0.100	0.337	0.864	3.70	398	183
254673 - AH-4 0-1' 1' BEB				ĺ	195	27.9
254674 - AH-5 0-1' 1' BEB	< 0.200	4.03	4.88	14.3	1870	1910
254675 - AH-6 0-1' 1' BEB				ļ	364	21.1

Sample: 254664 - AH-1 0-1' 2' BEB

Report Date: January 13, 2011	Work Order: 11010504	Page Number: 2 of 3		
Param Flag Chloride	Result 408	Units mg/Kg	RL 4.00	
Sample: 254665 - AH-1 1-1.5' 2' BEB				
Param Flag	Result	Units	RL	
Chloride	511	mg/Kg	4.00	
Sample: 254666 - AH-1 2-2.5' 2' BEB				
Param Flag	Result	Units	RL	
Chloride	367	mg/Kg	4.00	
Sample: 254667 - AH-1 3-3.5' 2' BEB				
Param Flag	Result	Units	RL	
Chloride	475	mg/Kg	4.00	
Sample: 254668 - AH-2 0-1' 1' BEB				
Param Flag	Result	Units	RL	
Chloride	1200	mg/Kg	4.00	
Sample: 254669 - AH-2 1-1.5' 1' BEB				
Param Flag	Result	Units	RL	
Chloride	1350	mg/Kg	4.00	
Sample: 254670 - AH-2 2-2.5' 1' BEB				
Param Flag	Result	Units	$_{ m RL}$	
Chloride	1030	mg/Kg	4.00	
Sample: 254671 - AH-2 3-3.5' 1' BEB				
Param Flag	Result	Units	RL	
Chloride	940	mg/Kg	4.00	

Report Date: January 13, 2011		Work Order: 11010504		Page Number: 3 of 3					
Sample: 254672 - AH-3 0-1' 1' BEB									
Param	Flag	Result	Units	RL					
Chloride		718	mg/Kg	4.00					
Sample: 254673	- AH-4 0-1' 1' BEB								
Param	Flag	Result	Units	RL					
Chloride		1270	mg/Kg	4.00					
Sample: 254674	- AH-5 0-1' 1' BEB								
Param	Flag	Result	Units	RL					
Chloride		<200	mg/Kg	4.00					
Sample: 254675	- AH-6 0-1' 1' BEB								
Param	Flag	Result	Units	RL					
Chloride		988	mg/Kg	4.00					



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WBENC: 237019

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DBE: VN 20657

NCTRCA WFWB38444Y0909

LELAP-02002

NELAP Certifications

Lubbock: T104704219-08-TX

El Paso: T104704221-08-TX

Midland: T104704392-08-TX

LELAP-02003

Kansas E-10317

Analytical and Quality Control Report

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

Report Date: January 13, 2011

Work Order: 11010504

Project Location: Eddy County, NM Project Name: COG/JR Horz Project Number: 114-6400743

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
254664	AH-1 0-1' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254665	AH-1 1-1.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254666	AH-1 2-2.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254667	AH-1 3-3.5' 2' BEB	soil	2010-12-29	00:00	2011-01-05
254668	AH-2 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254669	AH-2 1-1.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254670	AH-2 2-2.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254671	AH-2 3-3.5' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254672	AH-3 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254673	AH-4 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05

			Date	Time	\mathbf{Date}
Sample	Description	Matrix	Taken	Taken	Received
254674	AH-5 0-1' 1' BEB	soil	2010-12-29	00:00	2011-01-05
254675	AH-6 0-1', 1', BEB	soil	2010-12-29	00:00	2011-01-05

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 28 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

Michael april

Standard Flags

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

Case Narrative

Samples for project COG/JR Horz were received by TraceAnalysis, Inc. on 2011-01-05 and assigned to work order 11010504. Samples for work order 11010504 were received intact at a temperature of 3.0 C.

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

		Prep	Prep	$_{ m QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	65908	2011-01-12 at 10:10	76857	2011-01-12 at 10:10
Chloride (Titration)	SM 4500-Cl B	65759	2011-01-05 at 10:41	76736	2011-01-07 at 10:24
Chloride (Titration)	SM 4500-Cl B	65759	2011-01-05 at 10:41	76737	2011-01-07 at 10:25
TPH DRO - NEW	S 8015 D	65801	2011-01-06 at 15:19	76742	2011-01-06 at 15:19
TPH DRO - NEW	S 8015 D	65869	2011-01-10 at 14:56	76813	2011-01-10 at 14:56
TPH GRO	S 8015 D	65793	2011-01-06 at 11:27	76727	2011-01-06 at 11:27
TPH GRO	S 8015 D	65888	2011-01-11 at 14:09	76834	2011-01-11 at 14:09

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 11010504 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.

114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 4 of 28 Eddy County, NM

Analytical Report

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

76736 Prep Batch: 65759

Analytical Method: Date Analyzed:

SM 4500-Cl B

2011-01-07 Sample Preparation: 2011-01-05 Prep Method: N/A

Analyzed By: AR

Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		408	mg/Kg	50	4.00

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:

Midland

Analysis:

TPH DRO - NEW

Analytical Method:

S 8015 D

Prep Method: N/A

QC Batch:

76742 Prep Batch: 65801

Date Analyzed: Sample Preparation:

2011-01-06 2011-01-06 Analyzed By:

kg Prepared By: kg

RL

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	<u> </u>	94.1	mg/Kg	1	100	94	70 - 130

Sample: 254664 - AH-1 0-1' 2' BEB

Laboratory:

Midland

Analysis: TPH GRO

76727

Analytical Method:

RL

S 8015 D

2011-01-06

Prep Method: S 5035 Analyzed By: ME

QC Batch: Prep Batch:

65793

Date Analyzed: Sample Preparation:

2011-01-06

Prepared By:

ME

Parameter Units Dilution Flag Result RLGRO < 2.00 mg/Kg 2.00

					Бріке	Percent	Recovery
Surrogate	Flag	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.53	mg/Kg	1	2.00	126	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.36	mg/Kg	1	2.00	118	42 - 159

114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 5 of 28 Eddy County, NM

Sample: 254665 - AH-1 1-1.5' 2' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 76736 Prep Batch: 65759 Analytical Method: SM 4500-Cl B

Date Analyzed: Sample Preparation:

2011-01-07 2011-01-05

Prep Method: N/A Analyzed By: AR

Prepared By: AR

RL

Parameter Result Units Dilution RLFlag Chloride 511 mg/Kg 50 4.00

Sample: 254666 - AH-1 2-2.5' 2' BEB

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 76736

Analytical Method: SM 4500-Cl B Date Analyzed: 2011-01-07

Prep Method: N/A Analyzed By: AR

Prep Batch: 65759

Sample Preparation: 2011-01-05 Prepared By: AR

RL

Parameter Flag Result Units Dilution RLmg/Kg Chloride 367 50 4.00

Sample: 254667 - AH-1 3-3.5' 2' BEB

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 76736

Analytical Method: SM 4500-Cl B Date Analyzed:

2011-01-07

Prep Method: N/A Analyzed By: AR

Prep Batch: Sample Preparation: 65759

2011-01-05

Prepared By: AR

RL

Parameter Flag Result Units Dilution RLChloride 475 mg/Kg 50 4.00

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory: Midland

Analysis: BTEX QC Batch: 76857 Prep Batch: 65908

Analytical Method: S 8021B Date Analyzed: 2011-01-12 Sample Preparation: 2011-01-12

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

RL

Parameter Flag Result Units Dilution RLBenzene 8.26 mg/Kg 20 0.0200 Toluene 42.4 mg/Kg 20 0.0200

 $continued \dots$

Work Order: 11010504 COG/JR Horz

Page Number: 6 of 28 Eddy County, NM

sample 254668 continued ...

			RL						
Parameter F	lag		Result		Units	Di	lution	RL	
Ethylbenzene			29.2		mg/Kg		20	0.0200	
Xylene		86.8		mg/Kg		20		0.0200	
						Spike	Percent	Recovery	
Surrogate	\mathbf{F}	lag	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotoluene (TFT)			20.7	mg/Kg	20	20.0	104	52.8 - 137	
4-Bromofluorobenzene (4-BFE	3)	ı	46.6	mg/Kg	20	20.0	233	38.4 - 157	

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 76736 Prep Batch: 65759 Analytical Method: SM 4500-Cl B

S 8015 D

2011-01-06

Date Analyzed: 2011-01-07 Sample Preparation: 2011-01-05 Prep Method: N/A

Analyzed By: ARPrepared By: AR

RLResult Units Dilution RLParameter Flag Chloride 1200 mg/Kg 100 4.00

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory: Midland

Prep Batch:

Analysis: TPH DRO - NEW QC Batch: 76742

Analytical Method: Date Analyzed: 65801 Sample Preparation: 2011-01-06 Prep Method: N/A Analyzed By: kg Prepared By: kg

RLRLParameter Flag Result Units Dilution DR.O 6420 50.0mg/Kg 5

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	2	851	mg/Kg	5	100	851	70 - 130

Sample: 254668 - AH-2 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH GRO Analytical Method: S 8015 D Prep Method: S 5035 QC Batch: Analyzed By: 76727 Date Analyzed: 2011-01-06 MEPrep Batch: 65793 Prepared By: MESample Preparation: 2011-01-06

¹ High surrogate recovery due to peak interference.

² High surrogate recovery due to peak interference.

114-6400743

Work Order: 11010504 COG/JR Horz Page Number: 7 of 28 Eddy County, NM

	Flag		$rac{ ext{RL}}{ ext{Result}}$		Units	D	ilution	RL
GRO			4410		mg/Kg		20	2.00
						Spike	Percent	Recovery
Surrogate		Flag	Result	$\mathbf{U}\mathbf{nits}$	Dilution	${f Amount}$	$\operatorname{Recovery}$	Limits
Triffuorotoluene (TFT)			20.2	mg/Kg	20	20.0	101	48.5 - 152
4-Bromofluorobenzene (4-E	BFB)	3	38.1	mg/Kg	20	20.0	190	42 - 159

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory: Midland

Analysis: BTEX QC Batch: 76857 Prep Batch: 65908 Analytical Method: S 8021B
Date Analyzed: 2011-01-12
Sample Preparation: 2011-01-12

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

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		9.91	mg/Kg	50	0.0200
Toluene		48.5	m mg/Kg	50	0.0200
Ethylbenzene		30.5	mg/Kg	50	0.0200
Xylene		86.0	mg/Kg	50	0.0200

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		44.9	mg/Kg	50	50.0	90	52.8 - 137
4-Bromofluorobenzene (4-BFB)		69.7	mg/Kg	50	50.0	139	38.4 - 157

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 76736 Prep Batch: 65759 Analytical Method: SM 4500-Cl B Date Analyzed: 2011-01-07 Sample Preparation: 2011-01-05

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

		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Chloride		1350	mg/Kg	100	4.00

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW Analytical Method: S 8015 D Prep Method: N/A QC Batch: 76813 Date Analyzed: 2011-01-10 Analyzed By: kg Prep Batch: 65869 Sample Preparation: 2011-01-10 Prepared By: kg

³High surrogate recovery due to peak interference.

114-6400743

Work Order: 11010504 COG/JR Horz Page Number: 8 of 28 Eddy County, NM

Parameter	\mathbf{F}	lag	RL Result	Un	its	Dilution	RL
DRO			9700	mg/l	Kg	10	50.0
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	4	796	mg/Kg	10	100	796	70 - 130

Sample: 254669 - AH-2 1-1.5' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 76834 Prep Batch: 65888 Analytical Method: S 8015 D
Date Analyzed: 2011-01-11
Sample Preparation: 2011-01-11

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

Parameter	Flag	RL Result	Units	т	Dilution	m RL
GRO GRO	Ting	6760	mg/Kg			2.00
				Spike	Percent	Recovery

					Бріке	Percent	necovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		51.9	mg/Kg	50	50.0	104	48.5 - 152
4-Bromofluorobenzene (4-BFB)		70.4	$_{ m mg/Kg}$	50	50.0	141	42 - 159

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory: Midland

Analysis: BTEX QC Batch: 76857 Prep Batch: 65908 Analytical Method: S 8021B
Date Analyzed: 2011-01-12
Sample Preparation: 2011-01-12

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

		RL			
Parameter	\mathbf{Flag}	Result	Units	Dilution	RL
Benzene		11.9	mg/Kg	50	0.0200
Toluene		121	${ m mg/Kg}$	50	0.0200
Ethylbenzene		60.3	mg/Kg	50	0.0200
Xylene		176	mg/Kg	50	0.0200

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		52.0	mg/Kg	50	50.0	104	52.8 - 137
4-Bromofluorobenzene (4-BFB)	5	104	mg/Kg	50	50.0	208	38.4 - 157

⁴High surrogate recovery due to peak interference.

⁵High surrogate recovery due to peak interference.

Report Date: January 13, 2011 114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 9 of 28 Eddy County, NM

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory: Midland

Chloride (Titration) Analysis:

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR.

QC Batch: 76736 Prep Batch: 65759

Sample Preparation: 2011-01-05

2011-01-07

Prepared By: AR.

RL.

		1011			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		1030	mg/Kg	100	4.00

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 76813 Prep Batch: 65869

Analytical Method: S 8015 D Date Analyzed: 2011-01-10

Prep Method: N/A Analyzed By: kg Sample Preparation: 2011-01-10 Prepared By: kg

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		22300	mg/Kg	10	50.0

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	6	1900	mg/Kg	10	100	1900	70 - 130

Sample: 254670 - AH-2 2-2.5' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 76834 65888 Prep Batch:

Analytical Method: S 8015 D Date Analyzed: 2011-01-11 Sample Preparation: 2011-01-11

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

Parameter	Flag	Result	Units	Dilution	RL
GRO		5720	mg/Kg	50	2.00

				Spike	Percent	Recovery
Surrogate Flag F	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	50.4	mg/Kg	50	50.0	101	48.5 - 152
4-Bromofluorobenzene (4-BFB)	71.5	mg/Kg	50	50.0	143	42 - 159

 $^{^6\}mathrm{High}$ surrogate recovery due to peak interference.

Report Date: January 13, 2011 114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 10 of 28 Eddy County, NM

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:	Midland
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Analysis: BTEX QC Batch: 76857 Prep Batch: 65908

Analytical Method: S 8021B Date Analyzed:

2011-01-12 Sample Preparation: 2011-01-12 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0200	mg/Kg	1	0.0200
Toluene		< 0.0200	${ m mg/Kg}$	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	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	38.4 - 157

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 76736 Prep Batch: 65759

Analytical Method: Date Analyzed:

SM 4500-Cl B 2011-01-07

Prep Method: N/A Analyzed By: AR

Sample Preparation: 2011-01-05

Prepared By: AR

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		940	mg/Kg	100	4.00

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory:

Midland

Analysis: QC Batch: 76813 Prep Batch: 65869

TPH DRO - NEW

Analytical Method: S 8015 D Date Analyzed: 2011-01-10 Sample Preparation: 2011-01-10 Prep Method: N/A Analyzed By: kg Prepared By: kg

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		92.0	mg/Kg	1	100	92	70 - 130

114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 11 of 28 Eddy County, NM

Sample: 254671 - AH-2 3-3.5' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 76834 Prep Batch: 65888

Analytical Method: Date Analyzed:

S 8015 D 2011-01-11 Sample Preparation: 2011-01-11 Prep Method: S 5035 Analyzed By: ME

Prepared By: ME

- R.L.

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

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.30	mg/Kg	1	2.00	115	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.21	mg/Kg	1	2.00	110	42 - 159

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory: Midland

Analysis: BTEX QC Batch: 76857 Prep Batch: 65908

Analytical Method: S 8021B Date Analyzed: 2011-01-12 Sample Preparation: 2011-01-12

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.100	mg/Kg	5	0.0200
Toluene		0.337	mg/Kg	5	0.0200
Ethylbenzene		0.864	mg/Kg	5	0.0200
Xylene		3.70	mg/Kg	5	0.0200

Trifluorotoluene (TFT) 4.76 mg/Kg 5 5.00 95 52.8 -						Spike	Percent	$\operatorname{Recovery}$
· ,	Surrogate	Flag	Result	Units	Dilution	${f Amount}$	Recovery	Limits
4 Dec (4 DDD) 5 to 777 5 500 104 20 4	Trifluorotoluene (TFT)		4.76	mg/Kg	5	5.00	95	52.8 - 137
4-Bromonuorobenzene (4-BFB) 5.18 mg/Kg 5 5.00 104 38.4 -	4-Bromofluorobenzene (4-BFB)		5.18	mg/Kg	5	5.00	104	38.4 - 157

Sample: 254672 - AH-3 0-1' 1' BEB

Midland Laboratory:

Analysis: Chloride (Titration) QC Batch: 76736

Analytical Method: SM 4500-Cl B Date Analyzed: 2011-01-07

Prep Method: N/A Analyzed By: ARAR

Prep Batch: 65759

Sample Preparation: 2011-01-05

Prepared By:

Parameter	Flag	Result	Units	Dilution	RL
Chloride		718	mg/Kg	50	4.00

114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 12 of 28 Eddy County, NM

Sample: 254672 - AH-3 0-1' 1' BEB

Laboratory:

Midland

Analysis:

TPH DRO - NEW

QC Batch: Prep Batch:

76742 65801

Analytical Method: Date Analyzed:

S 8015 D

2011-01-06 Sample Preparation: 2011-01-06 Prep Method: N/A Analyzed By: kg

Prepared By:

RL

Units

mg/Kg

Parameter

Result 398

Units mg/Kg Dilution 1

RL $\overline{50.0}$

kg

DRO

Flag

Result

155

Dilution

1

Spike Amount

100

Percent Recovery

155

Recovery Limits

70 - 130

Surrogate n-Tricosane

Sample: 254672 - AH-3 0-1' 1' BEB

Flag

Laboratory:

Midland

Analysis: QC Batch: TPH GRO 76727

Analytical Method:

S 8015 D 2011-01-06

Prep Method: S 5035 Analyzed By: ME

Prep Batch:

65793

Date Analyzed: Sample Preparation:

2011-01-06

Prepared By: ME

RL

Parameter Result Flag GRO 183

Units mg/Kg Dilution 10

RL2.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		11.1	mg/Kg	10	10.0	111	48.5 - 152
4-Bromofluorobenzene (4-BFB)		11.8	mg/Kg	10	10.0	118	42 - 159

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

Prep Batch:

76736 65759

Date Analyzed: Sample Preparation:

2011-01-07 2011-01-05

Prepared By: AR

Flag

Parameter Chloride

RLResult 1270

Units mg/Kg Dilution 100

RL4.00

⁷High surrogate recovery due to peak interference.

Report Date: January 13, 2011 114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 13 of 28 Eddy County, NM

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 76742 Prep Batch: 65801

Analytical Method: S 8015 D

Date Analyzed: Sample Preparation: 2011-01-06

2011-01-06

Prep Method: N/A

Analyzed By: kg Prepared By: kg

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		195	mg/Kg	1	50.0

					Spike	Percent	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	8	133	mg/Kg	1	100	133	70 - 130

Sample: 254673 - AH-4 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 76727 Prep Batch: 65793

Analytical Method: S 8015 D Date Analyzed: 2011-01-06 Sample Preparation: 2011-01-06 Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		27.9	mg/Kg	1	2.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		2.41	mg/Kg	1	2.00	120	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.46	mg/Kg	_ 1	2.00	123	42 - 159

Sample: 254674 - AH-5 0-1' 1' BEB

Midland Laboratory:

Analysis: **BTEX** QC Batch: 76857 Prep Batch: 65908

Analytical Method: S 8021B Date Analyzed: 2011-01-12 Sample Preparation: 2011-01-12

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

RLUnits Parameter Flag Result Dilution RLBenzene < 0.200 0.0200mg/Kg $\overline{10}$ Toluene 4.03 mg/Kg 10 0.0200Ethylbenzene 4.88 mg/Kg 10 0.0200 Xylene 14.3 10 0.0200mg/Kg

⁸High surrogate recovery due to peak interference.

Report Date: January 13, 2011 114-6400743

Work Order: 11010504 COG/JR Horz Page Number: 14 of 28 Eddy County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		9.21	mg/Kg	10	10.0	92	52.8 - 137
4-Bromofluorobenzene (4-BFB)		14.4	mg/Kg	10	10.0	144	38.4 - 157

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 76737 Prep Batch: 65759 Analytical Method: SM 4500-Cl B Date Analyzed: 2011-01-07

Sample Preparation: 2011-01-05

Prep Method: N/A Analyzed By: AR

Prepared By: AR

RL Popult

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH DRO - NEW

QC Batch: 76742 Prep Batch: 65801 Analytical Method: S 8015 D
Date Analyzed: 2011-01-06

Date Analyzed: 2011-01-06 Sample Preparation: 2011-01-06 Prep Method: N/A

Analyzed By: kg Prepared By: kg

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	9	360	mg/Kg	1	100	360	70 - 130

Sample: 254674 - AH-5 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH GRO
QC Batch: 76727
Prep Batch: 65793

Analytical Method: S 8015 D
Date Analyzed: 2011-01-06
Sample Preparation: 2011-01-06

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

⁹High surrogate recovery due to peak interference.

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Work Order: 11010504 COG/JR Horz

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Eddy County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		56.0	mg/Kg	50	50.0	112	48.5 - 152
4-Bromofluorobenzene (4-BFB)		64.6	mg/Kg	50	50.0	129	42 - 159

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 76737 Analytical Method: SM 4500-Cl B

2011-01-07

Prep Method: N/A Analyzed By: AR

Prep Batch: 65759

Date Analyzed: Sample Preparation: 2011-01-05

Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		988	mg/Kg	100	4.00

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory: Midland

Analysis: QC Batch:

TPH DRO - NEW

76742 Prep Batch: 65801

Analytical Method: Date Analyzed:

S 8015 D 2011-01-06 Sample Preparation: 2011-01-06 Prep Method: N/A

Analyzed By: kg Prepared By: kg

RL

Parameter	Flag	Result	Units	Dilution	RL
DRO		364	mg/Kg	1	50.0

					\mathbf{S} pike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	10	158	mg/Kg	1	100	158	70 - 130

Sample: 254675 - AH-6 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 76727 Prep Batch: 65793

Analytical Method: S 8015 D Date Analyzed: 2011-01-06 Sample Preparation: 2011-01-06

Prep Method: S 5035 Analyzed By: MEPrepared By: ME

Parameter	Flag	Result	Units	Dilution	RL
GRO		21.1	mg/Kg	1	2.00

¹⁰High surrogate recovery due to peak interference.

114-6400743

Work Order: 11010504 COG/JR Horz

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Eddy County, NM

Surrogate	Flag	Result	Units	Dilution	${ m Spike} \ { m Amount}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.28	mg/Kg	1	2.00	114	48.5 - 152
4-Bromofluorobenzene (4-BFB)		2.22	mg/Kg	1	2.00	111	42 - 159

Method Blank (1)

QC Batch: 76727

QC Batch: 76727 Date Analyzed: 2011-01-06 Analyzed By: ME

Prep Batch: 65793

QC Preparation: 2011-01-06

Prepared By: ME

MDL

Flag Parameter Result Units RLGRO < 1.65 mg/Kg $\overline{2}$

					Spike	$\operatorname{Percent}$	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.73	mg/Kg	1	2.00	86	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.61	mg/Kg	1	2.00	80	52.4 - 130

Method Blank (1)

QC Batch: 76736

QC Batch: 76736 Prep Batch: 65759 Date Analyzed: 2011-01-07 QC Preparation: 2011-01-05 Analyzed By: AR Prepared By: AR

Flag

MDLResult Units RL<2.18 mg/Kg

Method Blank (1)

QC Batch: 76737

QC Batch:

Parameter

Chloride

76737

Date Analyzed:

2011-01-07

Analyzed By: AR

Prep Batch: 65759

QC Preparation: 2011-01-05

Prepared By: AR

MDL

Parameter Flag Result Units RLChloride < 2.18mg/Kg 4

Method Blank (1)

QC Batch: 76742

QC Batch: 76742 Prep Batch: 65801

Date Analyzed: 2011-01-06 QC Preparation: 2011-01-06 Analyzed By: kg Prepared By: kg

114-6400743

Work Order: 11010504 COG/JR Horz Page Number: 17 of 28 Eddy County, NM

continued ...

				MDL					
Parameter		Flag	Result			$\mathbf{U}\mathbf{n}$	its	RL	
DRO				<14.6	′Kg		50		
						Spile	Paraont	Rog	overy
Surrogate	Flag	Result	Units	Dilut	ion	_			mits
n-Tricosane	1 1006	85.1							- 130
			<u> </u>						
Method Bla	ank (1)	QC Batch: 76813							
QC Batch:	76813		Date Ana	alvzed: 20)11-01-10		Analy	zed By:	kg
Prep Batch:	65869			•				ared By:	
				MDI.					
Parameter		\mathbf{Flag}		Result		Un	its		RL
DRO				<14.6			mg/Kg		
						Spike	Percent	Poo	overy
Surrogate	Flag	Result	Units	Dilut	ion	Amount	Recovery		mits
n-Tricosane		99.6	mg/Kg	1		100	100		- 130
QC Batch: Prep Batch:	76834 65888		Date Ana QC Prepa	•	11-01-11 11-01-11		Analyz Prepar	-	ME ME
Parameter		Flag		$rac{ ext{MDL}}{ ext{Result}}$		Un	ite		RL
GRO		riag		<1.65		mg/			2
Surrogate		Flag	Result	Units	Dilution	Spike	Percent Recovery		overy nits
Trifluorotolue	ene (TFT)	2.005	1.70	mg/Kg	1	2.00	85		- 150
4-Bromofluor		3FB)	1.56	mg/Kg	11	2.00	78	52.4	- 130
Method Bla	ank (1)	QC Batch: 76857							
	. ,		Data A.	1d. 00°	11-01-12		A a 1	ad D	MI
QC Batch: Prep Batch:	76857 65908		Date Ana QC Prepa	J	11-01-12		Analyz Prepar		ME ME
				MD	L				
Parameter		Flag		Resu			nits		RL
Benzene				< 0.015	0	mg	/Kg		0.02

Work Order: 11010504 COG/JR Horz

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114-6400743

method blank continued . . .

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.75	mg/Kg	1	2.00	88	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.77	mg/Kg	1	2.00	88	55.4 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 76727 Date Analyzed:

2011-01-06

Analyzed By: ME

Prep Batch: 65793

QC Preparation: 2011-01-06

Prepared By: ME

	LCS			Spike	Matrix		Rec.
Param	Result	Units	\mathbf{Dil} .	Amount	Result	Rec.	\mathbf{Limit}
GRO	15.8	mg/Kg	1	20.0	< 1.65	79	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	15.6	mg/Kg	1	20.0	< 1.65	78	69.9 - 95.4	1	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	Units	Dil.	Amount	Rec.	${ m Rec.}$	Limit
Trifluorotoluene (TFT)	1.64	1.80	mg/Kg	1	2.00	82	90	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.59	1.78	mg/Kg	1	2.00	80	89	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: 76736 Date Analyzed:

2011-01-07

Analyzed By: AR

Prep Batch: 65759

QC Preparation: 2011-01-05

Prepared By: AR

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	96.1	mg/Kg	1	100	< 2.18	96	85 - 115

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

114-6400743

Work Order: 11010504 COG/JR Horz

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	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	7	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:

76737

Date Analyzed:

2011-01-07

Analyzed By: AR

Prep Batch: 65759 QC Preparation: 2011-01-05

Prepared By: AR

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	96.6	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	104	mg/Kg	1	100	< 2.18	104	85 - 115	7	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:

76742 Prep Batch: 65801 Date Analyzed:

QC Preparation:

2011-01-06 2011-01-06

Analyzed By: kg Prepared By:

LCS Spike Matrix Rec. Param Result Units Dil. Amount Result Rec. Limit DRO 47.5 - 144.1 200 250 <14.6 80 mg/Kg 1

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
DRO	217	mg/Kg	1	250	<14.6	87	47.5 - 144.1	8	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	Units	$\mathrm{Dil}.$	Amount	Rec.	Rec.	$_{ m Limit}$
n-Tricosane	117	120	mg/Kg	1	100	117	120	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

76813 65869

Date Analyzed:

2011-01-10

QC Preparation: 2011-01-10 Analyzed By: kg

Prepared By:

114-6400743

Work Order: 11010504 COG/JR Horz

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	LCS			Spike	Matrix		Rec.
Param	Result	\mathbf{U} nits	Dil.	Amount	Result	Rec.	Limit
DRO	265	mg/Kg	1	250	<14.6	106	47.5 - 144.1

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

	LCSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	257	mg/Kg	1	250	<14.6	103	47.5 - 144.1	3	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	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	124	123	mg/Kg	1	100	124	123	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 76834 Prep Batch: 65888 Date Analyzed: 2011-01-11 QC Preparation: 2011-01-11

Analyzed By: ME Prepared By: ME

LCS Spike Matrix Rec. Result Units Dil. Amount Result Limit Param Rec. 69.9 - 95.4 GRO 14.7 20.0<1.65 74 mg/Kg

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	$\mathbf{Dil}.$	Amount	Result	Rec.	Limit	RPD	Limit
GRO	15.4	mg/Kg	1	20.0	< 1.65	77	69.9 - 95.4	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	${ m Units}$	$\mathrm{Dil}.$	Amount	${ m Rec.}$	${ m Rec.}$	Limit
Trifluorotoluene (TFT)	1.58	1.69	mg/Kg	1	2.00	79	84	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.54	1.67	mg/Kg	1	2.00	77	84	65.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 65908

76857

Date Analyzed:

2011-01-12 QC Preparation: 2011-01-12 Analyzed By: ME Prepared By: ME

Param	$egin{array}{c} ext{LCS} \ ext{Result} \end{array}$	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	2.19	mg/Kg	1	2.00	< 0.0150	110	81.9 - 115
Toluene	2.02	mg/Kg	1	2.00	< 0.00950	101	81.9 - 113
Ethylbenzene	1.97	mg/Kg	1	2.00	< 0.0106	98	78.4 - 107

 $continued \dots$

Work Order: 11010504 COG/JR Horz

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control	snikes	continued	
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	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	\mathbf{U} nits	Dil.	Amount	Result	Rec.	Limit
Xylene	5.89	mg/Kg	1	6.00	< 0.00930	98	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	2.30	mg/Kg	1	2.00	< 0.0150	115	81.9 - 115	5	20
Toluene	2.10	mg/Kg	1	2.00	< 0.00950	105	81.9 - 113	4	20
Ethylbenzene	2.08	mg/Kg	1	2.00	< 0.0106	104	78.4 - 107	5	20
Xylene	6.18	mg/Kg	1	6.00	< 0.00930	103	79.1 - 107	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	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.73	1.65	mg/Kg	1	2.00	86	82	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.82	1.74	mg/Kg	1	2.00	91	87	69.8 - 121

Matrix Spike (MS-1) Spiked Sample: 254664

QC Batch:

76727

Date Analyzed:

2011-01-06

Analyzed By: MEPrepared By: ME

Prep Batch: 65793

QC Preparation: 2011-01-06

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO	15.4	mg/Kg	1	20.0	< 1.65	77	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.	Limit	RPD	Limit
GRO	15.6	mg/Kg	1	20.0	< 1.65	78	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	${ m Rec.}$
Surrogate	Result	Result	\mathbf{Units}	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.49	2.47	mg/Kg	1	2	124	124	50 - 162
4-Bromofluorobenzene (4-BFB)	2.45	2.44	mg/Kg	1	2	122	122	50 - 162

Matrix Spike (MS-1) Spiked Sample: 254673

QC Batch: 76736 Date Analyzed:

2011-01-07

Analyzed By: AR

Prep Batch: 65759

QC Preparation: 2011-01-05

Prepared By: AR

114-6400743

Work Order: 11010504 COG/JR Horz

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	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	10400	mg/Kg	100	10000	1270	91	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	11100	mg/Kg	100	10000	1270	98	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: 254696

QC Batch: 76737

Date Analyzed:

2011-01-07

Analyzed By: AR

Prep Batch: 65759

QC Preparation: 2011-01-05

Prepared By: AR

	MS			\mathbf{S} pike	Matrix		Rec .
Param	Result	Units	Dil.	Amount	Result	Rec.	$_{ m Limit}$
Chloride	11100	mg/Kg	100	10000	1160	99	85 - 115

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

	MSD			$_{ m Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	11700	mg/Kg	100	10000	1160	105	85 - 115	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: 254664

QC Batch:

76742

Prep Batch: 65801

Date Analyzed:

2011-01-06

QC Preparation: 2011-01-06

Analyzed By: kg

Prepared By: kg

	MS			$_{ m Spike}$	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	${ m Rec.}$	Limit
DRO	161	mg/Kg	1	250	<14.6	64	11.7 - 152.3

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

	MSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	${ m Rec.}$	Limit	RPD	Limit
DRO	162	mg/Kg	1	250	<14.6	65	11.7 - 152.3	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	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	106	106	mg/Kg	1	100	106	106	70 - 130

114-6400743

Work Order: 11010504 COG/JR Horz

Page Number: 23 of 28 Eddy County, NM

Matrix Spike (MS-1)

Spiked Sample: 254671

QC Batch: 76813 Prep Batch: 65869 Date Analyzed: 2011-01-10 QC Preparation: 2011-01-10 Analyzed By: kg Prepared By: kg

MS Spike Matrix Rec. Dil. Amount Result Limit Result Units Rec. Param $\overline{\text{DRO}}$ 220 250<14.6 88 11.7 - 152.3 mg/Kg

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	\mathbf{U} nits	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	221	mg/Kg	1	250	<14.6	88	11.7 - 152.3	0	20

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

	MS	MSD			Spike	MS	MSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	107	105	mg/Kg	1	100	107	105	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 254671

QC Batch: 76834 Date Analyzed: 2011-01-11 Analyzed By: ME

Prep Batch: 65888

QC Preparation: 2011-01-11

Prepared By: ME

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
GRO	17.1	mg/Kg	1	20.0	< 1.65	81	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.	Limit	RPD	Limit
GRO	16.9	mg/Kg	1	20.0	< 1.65	80	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	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	$\mathrm{Rec.}$	Rec.	$_{ m Limit}$
Trifluorotoluene (TFT)	2.28	2.22	mg/Kg	1	2	114	111	50 - 162
4-Bromofluorobenzene (4-BFB)	2.33	2.29	mg/Kg	11	2	116	114	50 - 162

Matrix Spike (MS-1) Spiked Sample: 255031

QC Batch: 76857 Prep Batch: 65908 Date Analyzed: 2011-01-12 QC Preparation: 2011-01-12 Analyzed By: ME Prepared By: ME

Work Order: 11010504 COG/JR Horz Page Number: 24 of 28 Eddy County, NM

Param		MS Result	Units	Dil.	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Benzene	11	2.48	mg/Kg	1	2.00	< 0.0150	124	80.5 - 112
Toluene		2.25	mg/Kg	1	2.00	< 0.00950	112	82.4 - 113
Ethylbenzene		2.25	mg/Kg	1	2.00	< 0.0106	112	83.9 - 114
Xylene		6.77	mg/Kg	1	6.00	0.1443	110	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	12	2.40	mg/Kg	1	2.00	< 0.0150	120	80.5 - 112	3	20
Toluene		2.21	mg/Kg	1	2.00	< 0.00950	110	82.4 - 113	2	20
Ethylbenzene		2.22	mg/Kg	1	2.00	< 0.0106	111	83.9 - 114	1	20
Xylene		6.69	mg/Kg	1	6.00	0.1443	109	84 - 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	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	3 14	2.35	2.42	mg/Kg	1	2	118	121	41.3 - 117
4-Bromofluorobenzene (4-BFB)		2.29	2.38	mg/Kg	1	2	114	119	35.5 - 129

Standard (CCV-1)

QC Batch: 76727

Date Analyzed: 2011-01-06

Analyzed By: ME

			CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent	Date
			rrue	round	rercent	$\operatorname{Recovery}$	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.914	91	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76727

Date Analyzed: 2011-01-06

Analyzed By: ME

			CCVs True	${ m CCVs} \ { m Found}$	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.913	91	80 - 120	2011-01-06

Standard (CCV-3)

QC Batch: 76727

Date Analyzed: 2011-01-06

Analyzed By: ME

¹¹Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

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

¹³Surrogate out due to peak interference.

¹⁴Surrogate out due to peak interference.

Work Order: 11010504 COG/JR Horz Page Number: 25 of 28 Eddy County, NM

			CCVs	${ m CCVs}$	CCVs	Percent	Б.,
Param	Flag	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed
GRO	riag	mg/Kg	1.00	0.976	98	80 - 120	2011-01-06
GILO		mg/ rg	1.00	0.310	30	00 - 120	2011-01-00
Standard	(ICV-1)						
QC Batch:	76736	,	Date Ana	lyzed: 2011-0	1-07	Ana	lyzed By: AR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	$\operatorname{Conc.}$	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	97.6	98	85 - 115	2011-01-07
Standard	(CCV-1)						
QC Batch:	76736		Date Ana	lyzed: 2011-01	1-07	Anal	yzed By: AR
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2011-01-07
Standard ((ICV-1)						
QC Batch:	76737		Date Ana	lyzed: 2011-01	1-07	Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	97.9	98	85 - 115	2011-01-07
Standard ((CCV-1)						
QC Batch:	,		Date Ana	lyzed: 2011-01	1-07	Anal	yzed By: AR
.			CCVs	m CCVs	CCVs	Percent	.
			OO V 8	50.48	OUVS	r ercene	~ .

Standard (CCV-1)

Flag

Units

mg/Kg

Param

Chloride

QC Batch: 76742

Date Analyzed: 2011-01-06

Found

Conc.

102

Percent

Recovery

102

Recovery

Limits

85 - 115

True

Conc.

100

Analyzed By: kg

Date

Analyzed

2011-01-07

114 - 6400743

Work Order: 11010504 COG/JR Horz

Page Number: 26 of 28 Eddy County, NM

			CCVs	CCVs	CCVs	Percent	•
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	200	80	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76742

Date Analyzed: 2011-01-06

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	251	100	80 - 120	2011-01-06

Standard (CCV-3)

QC Batch: 76742

Date Analyzed: 2011-01-06

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	224	90	80 - 120	2011-01-06

Standard (CCV-2)

QC Batch: 76813

Date Analyzed: 2011-01-10

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	286	114	80 - 120	2011-01-10

Standard (CCV-3)

QC Batch: 76813

Date Analyzed: 2011-01-10

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	253	101	80 - 120	2011-01-10

Standard (CCV-1)

QC Batch: 76834

Date Analyzed: 2011-01-11

Analyzed By: ME

Work Order: 11010504 COG/JR Horz Page Number: 27 of 28 Eddy County, NM

			CCVs True	CCVs Found	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.877	88	80 - 120	2011-01-11

Standard (CCV-2)

QC Batch: 76834

Date Analyzed: 2011-01-11

Analyzed By: ME

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.988	99	80 - 120	2011-01-11

Standard (CCV-1)

QC Batch: 76857

Date Analyzed: 2011-01-12

Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.114	114	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.102	102	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.0987	99	80 - 120	2011-01-12
Xylene		mg/Kg	0.300	0.295	98	80 - 120	2011-01-12

Standard (CCV-2)

QC Batch: 76857

Date Analyzed: 2011-01-12

Analyzed By: ME

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.111	111	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.103	103	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2011-01-12
Xylene		mg/Kg	0.300	0.302	101	80 - 120	2011-01-12

Standard (CCV-3)

QC Batch: 76857

Date Analyzed: 2011-01-12

Analyzed By: ME

Work Order: 11010504 COG/JR Horz Page Number: 28 of 28 Eddy County, NM

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.112	112	80 - 120	2011-01-12
Toluene		mg/Kg	0.100	0.104	104	80 - 120	2011-01-12
Ethylbenzene		mg/Kg	0.100	0.101	101	80 - 120	2011-01-12
\mathbf{X} ylene		${ m mg/Kg}$	0.300	0.297	99	80 - 120	2011-01-12

Analysis I	Request of Chain of Custod	PAGE: 1 OF: Z											
- Tallely 6.0 .		ANALYSIS REQUEST (Circle or Specify Method No.)											
	TETRATECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946		(Ext. to C35)										
CLIENT NAME:	SITE MANAGER:	₽ PRESERVATIVE	17X1005 Ba Cd Ba Cd 770/624 770/625										
COG	PROJECT NAME:	OONTAINE IN STATE OF THE STATE	As Ba As Ba As Ba (8260/62 8270/6										
PROJECT NO.: 114-6400743	COG/IC Horz	CONI	MOD.) NOD.) S Ag As S Ag As S Ag As S (olattiles C. C. C. Air) Air) Air) Air)										
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668	A#-Z 0-1' 1' BEB												
669	HH-2 1-15 1 BED												
670	HH-Z Z-Z-5' 1' BEB												
671	AH-Z 3-35 1 BEB												
672	A4-3 0-1 1' BEB												
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RELINQUISHED BY: (Signature) RELINQUISHED BY: (Signature)	Time:	Time: Date:	SAMPLED BY: (Print & Initial) Date: 12/10 Time: 15/30 SAMPLE SHIPPED BY: (Circle) AIRBILL #:										
•	Time:	Time:	FEDEX BUS HAND DELIVERED UPS OTHER:										
RELINQUISHED BY: (Signature)	Date: RECEIVED BY: (Signature)	Date:	TETRA TECH CONTACT PERSON: Results by:										
RECEIVING LABORATORY:	RECEIVED BY: (Signature) ZIP: DATE: 11 - 5 - (0)	TIME: 91.30	The RUSH Charges Authorized: Yes No										
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Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

Analysis Request of Chain of Custody Record TETRATECH							PAGE: Z OF: Z																				
						ANALYSIS REQUEST (Circle or Specify Method No.)																					
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