		S	ITE INFOF	RMATION						
		Repor	t Type: C	losure Re	port					
General Site In	formation: 2RP-44	19-0			To the test of the second					
Site:	A discount to the control of the con	RJU Inject	tion Trunk Line							
Company:			rating LLC							
	ship and Range	Unit A	Sec 34	T17S	R29E					
Lease Number		API # 30-0		•	·					
County:	· · · · · · · · · · · · · · · · · · ·	Eddy Cou		N		404 00 0000 W				
GPS: Surface Owne	<i>p.</i> ,	Federal	32 47.701°	N		104 03.233° W				
Mineral Owner		redetai								
Directions:		(Standard F		uth on CR 213 f		s to intersection of Hwy 82 and CR 213 o end of pavement then 500 feet to two				
Date Released.			4/15/2010							
Type Release:		Produced v			7					
Source of Cont. Fluid Released			om newly instal	iea 2 inch tibe	r/poly trunk I	ine.				
Fluids Recover			190 bbls							
Name:	Josh Russo				lke Tavare					
Company:	COG Operating, L	LC			Tetra Tech	1				
Address:	550 W. Texas, Sui				1910 N. Bi	ig Spring				
P.O. Box						<u> </u>				
City:	Midland, Tx 79701				Midland, T	exas				
Phone number:					(432) 682-					
rnone number.	[(40Z) Z [Z"Z033				[(702) 002					
Fax:	(432) 687-8008				(432) 682-					

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	0
WellHead Protection:	Ranking Score	Site Data
Water Source <1,000 ft., Private <200 ft.	20	
Water Source >1,000 ft., Private >200 ft.	0	Ō
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
Total Ranking Score:		RECEIVED
Acc	eptable Soil RRAL (n	ng/kg) FEB 1 4 2011
Benzer	ne Total BTEX	TPH
	50	5,000 NMOCD ARTESIA



February 1, 2011

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

Re: Closure Report for the COG Operating LLC., RJU Injection Trunk Line, Unit A, Section 34, Township 17 South, Range 29 East, Eddy County, New Mexico. (2RP-449-0)

Mr. Bratcher:

Tetra Tech Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from the RJU injection trunk line site located in Unit A, Section 34 Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32 47.701°, W 104 03.233°. 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 April 15, 2010, when approximately 190 barrels of produced water was released from a faulty injection line. The line was subsequently excavated, removed, and replaced. Vacuum trucks were utilized to recover 130 barrels of standing fluids. The initial and final C-141s are enclosed in Appendix A.

Groundwater

No water wells were listed within Section 34 which contains the site. However, an abandoned dry water well, located in Section 35, was measured by Tetra Tech personnel with a total depth of 153' below ground surface (bgs). According to the Geology and Groundwater Resources of Eddy County, New Mexico (Report 3), one well is located in Section 22 (Bear Grass Draw) with a depth to water of 79.0' below ground surface (bgs). In addition, a well located in Section 29 had measured groundwater reported at 210' bgs. According to the NMOCD groundwater map the average depth to groundwater in this area is approximately 150' bgs. The Geology and Groundwater Resources of Eddy County, New Mexico (Report 3) well report data is included 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 Results

On April 22, 2010, Tetra Tech personnel inspected and sampled the spill area. The spill area, located along the injection line, measured approximately 40' x 145'. A total of five (5) auger holes (AH-1 through AH-5) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1.

Referring to Table 1, none of the samples exceeded the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in all of the auger holes, with no delineation below 250 mg/kg. However, the chloride concentrations in AH-5 did decline at 1-1.5' bgs and increased to 1,470 mg/kg at 5.5-6' bgs.

On June 30, 2010, Tetra Tech personnel supervised the installation of three (3) boreholes (SB-1 through SB-3), utilizing an air rotary rig, in order to further delineate the chloride impact. The soil borings, shown on Figure 3, were installed in the vicinity of the previous auger holes and were extended to a maximum depth of 30 feet bgs. Samples were collected at 2 to 3 foot intervals for the first 10 feet and 5 foot intervals thereafter, and submitted to the laboratory for chloride analysis. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 2.

Referring to Table 2, analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extended down to 15.0' below surface in all three of the borings. All samples had chloride concentrations which decreased with depth and appeared defined.

Corrective Action

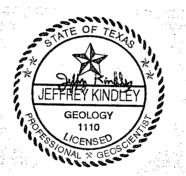
In accordance with the work plan, dated October 4, 2010, Tetra Tech personnel were onsite October 19 through the 22, 2010, to oversee the excavation of chloride impacted soils at the site. As per the work plan, the soils were excavated along the foot print of the spill (Figure 4) to a maximum depth of 10 feet bgs in the vicinity of soil



borings SB-1 through SB-3. Approximately 1,720 cubic yards of chloride impacted soils were removed and transported offsite for disposal at Controlled Recovery Inc. (CRI) of Carlsbad, NM. On October 20 and 22, 2010, Mr. Jim Amos of the BLM performed an initial and final inspection of the excavation. Afterwards, the site was backfilled with clean soils, brought up to surface grade and recontoured to match the surrounding landscape.

Closure Request

Based upon the remediation performed at this site, COG Operating LLC respectfully requests closure of this site. If you have any question or comments concerning the activities performed at the Site, please call me at (432) 682-4559.



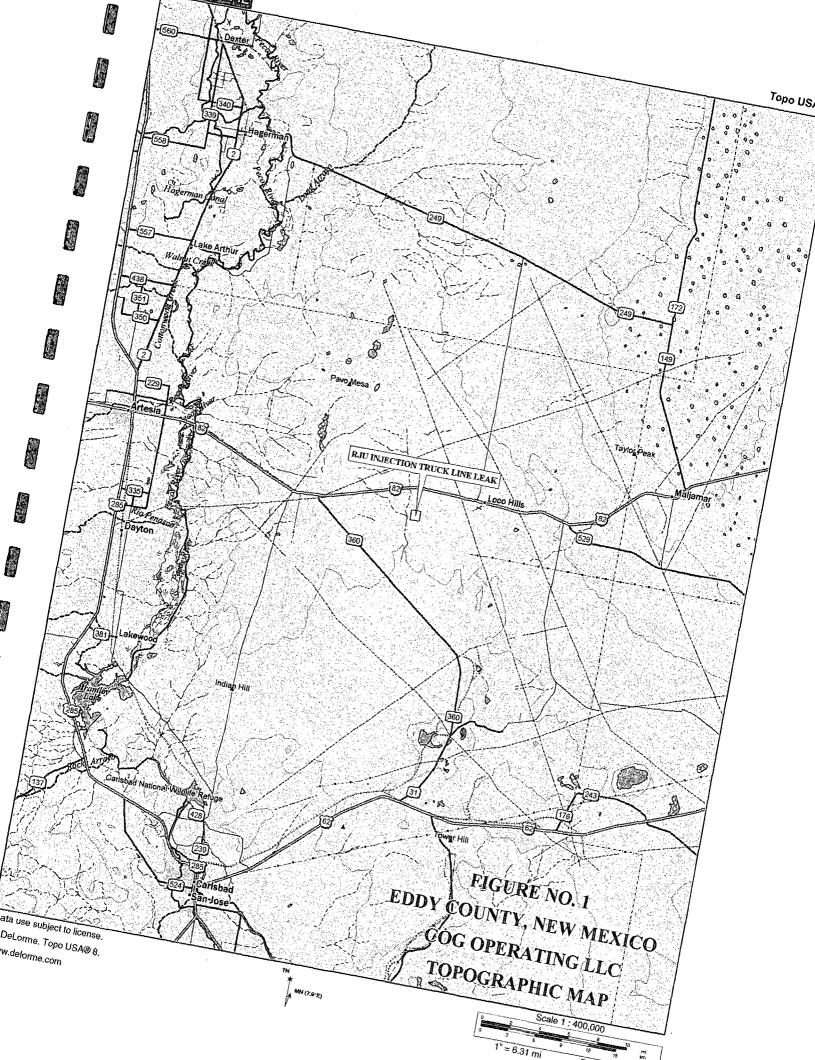
Respectfully submitted, Tetra Tech Inc.

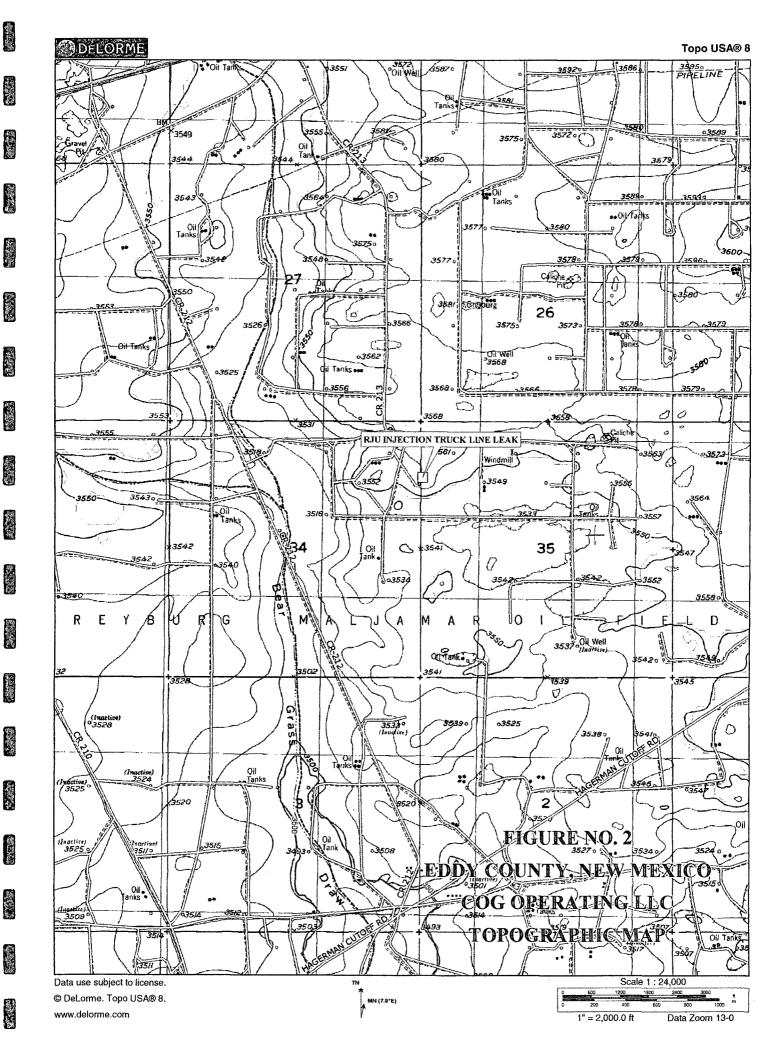
Jeff Kindley, P.G. Senior Project Manager

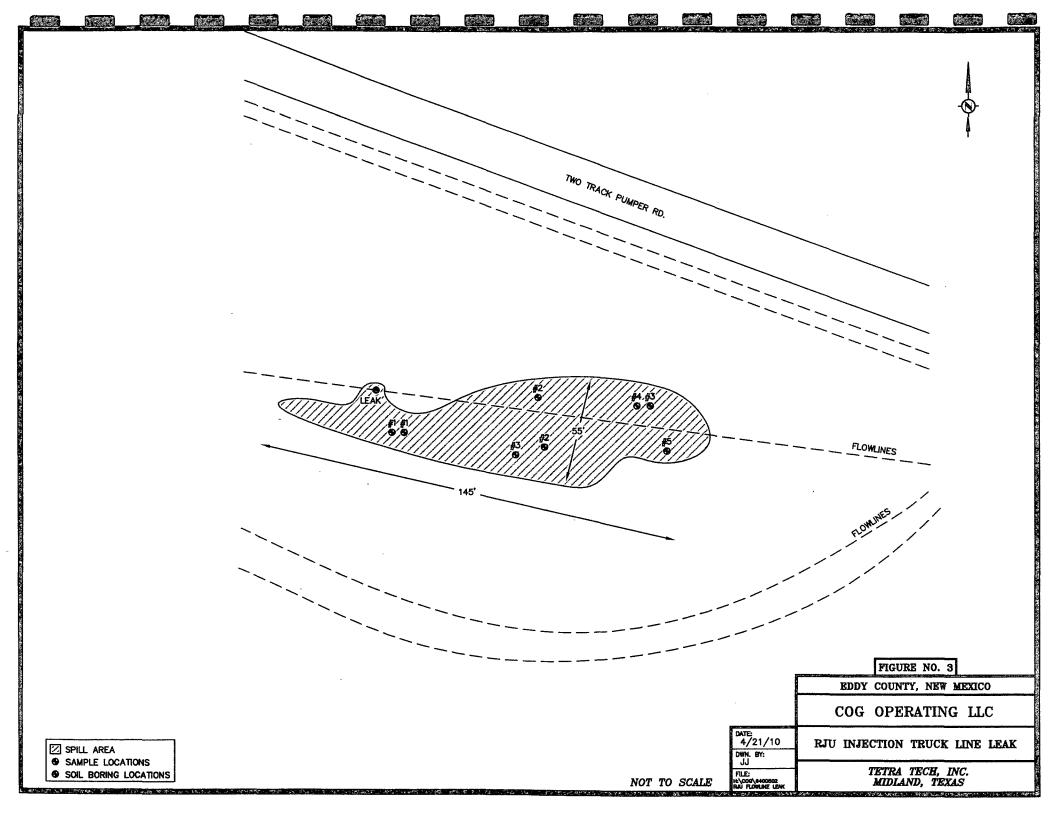
cc: Pat Ellis – COG Terry Gregston – BLM Jim Amos – BLM

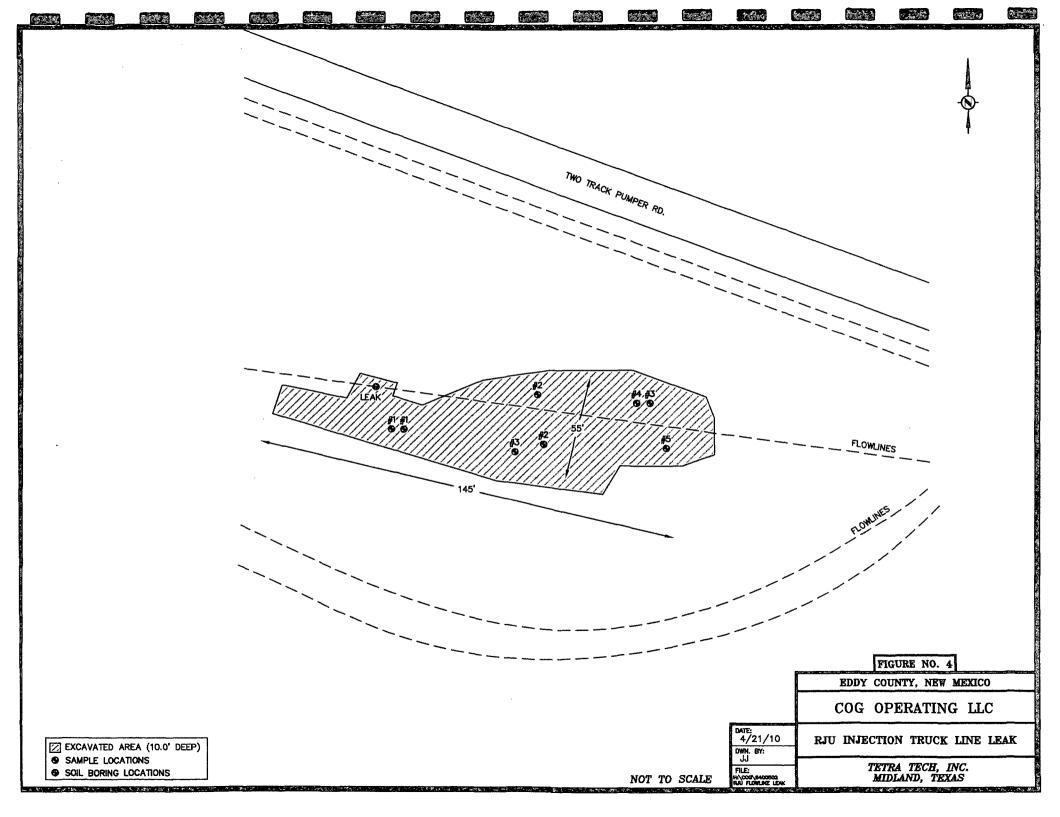
FIGURES

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TABLES

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Table 1 COG Operating LLC. RJU Inj. Line Leak EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soi	l Status	TF	H (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	Chloride
D.	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	4/22/2010	0-1	<u> </u>		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	2,540
		1-1.5'			X								7,690
		2-2.5			X								4,750
		3-3.5'		Tistor.	X						14 (18 8 V)		3,890
		4-4.5	图图 137		X		Baran Baran Baran					19.	5,190
		5-5.5'	7		X				7.87.				11,900
		5.5-6	13.14		X								14,700
AH-2	4/22/2010	0-1			X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	6,040
		1-1.5			X		And April			្រុំប្រទីស៊ីស្វ		- 3	6,800
		2-2.5'		1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	y X	进行							4,300
		3-3.5'			X					1993 - 199			3,970
		4-4.5'			X			10 10 10 10 14 10 10				1780 125 178 1 6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8,870
		4.5-5			X		3.1	, 27°					11,700
AH-3	4/22/2010	0-1	1' BEB		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	0.0976	8,200
AH-4	4/22/2010	0-1'	1' BEB	s¥21	X	<5.00	150	150	<0.0500	<0.0100	<0.0500	<0.0500	5,530
		⊬.1-1.5 ¹ _3	1' BEB	CONTRACTOR	, X		42.0		6 m2 m3	19.00		10.1	5,080
		2-2.5	1' BEB		X		是 会 为			14952			5,530
		3-3.5	1 BEB		X			Same Same			AND ASSESSED.		5,560
		4-4.5	1 BEB	企成程	Χ,								7,450
		4.5-5	1' BEB	The state of the	X								9,490
AH-5	4/22/2010	0-1	.5' BEB		X	<1.00	<50.0	<50.0	<0.0100	<0.0100	<0.0100	<0.0100	2,340
		1-1.5'	.5' BEB		Χ	Q 2	Wales Su		43,445			ST 1-188	414
		2-2.5'	.5' BEB		X X	The state of				- 14 <u>5</u>	1. 35 374 3		424
		3-3.5'	5 BEB		* X	11.5	4 14		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		1,26:70.0		475
		4-4.5'	.5' BEB		X	7 14 07							485
		5-5.5	.5' BEB		X			A. 1838. S	J. S. Y. J. Y.				864
		5.5-6'	.5' BEB	14,133	X	10 July 10 Jul		1. 3. 3.					1,470

BEB Below Excavation Bottom

(--) Not Analyzed

Removed soils

Table 2 COG Operating LLC. RJU Inj. Line Leak EDDY COUNTY, NEW MEXICO

Sample	Sample	Sample	Depth	Soi	l Status	TI	PH (mg/k	g)	Benzene	Toluene	Ethlybenzene	Xylene	
ID	Date	Depth (ft)	(BEB)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
SB-1	8/12/2010				X	<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<200
	11	. 3' .			X								335
	II	5			X							198	4,460
	n	7: 4	Sections.		X	* 100 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	14.35						11,200
	11	10'			X	Salaria (is a second					10,700
	11	15'		Х		-	-	-	-	-	-		1,810
	ır	20'		Х		_	-	-	-	•	-		408
	ii ii	25'		Х		-	-	-	-	-	-		240
	II.	30'		Х		-	_	-	-	-	-	*	392
SB-2	8/12/2010			d, dista ja Vario i S	X	<2.00	110	110	<0.0200	<0.0200	<0:0200	<0.0200	586
	(I	3			∴ X			A 18 14 17	41 107			. 4 3.13	2,490
	u	5,	ma magazine at	i.	Χ			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					586
	. 11	(* 7)	A Part of the Control		X								6,810
	n	, 10°	evilla Tigata	a Zivo	. X		10 av.	137 . Zh					1,380
	11	15'		Х		-	-	-	_	-	START OF THE START	<u> </u>	1,090
	П	20'		Χ		-	-	_	-	-	_	-	586
)1	25'		Х		-	-	-	-		_	-	412
	tt	30'		Х		-	-	-	-	_	-	_	275
SB-3	8/12/2010				Χ	<2.00	<50.0	<50.0	<0.0200	~<0.0200	<0.0200	<0.0200	- 1,470 ∉
	11	:: 3 ' ∴			X				ANGERT				2,330
	12	5 '*/-			X				1.34.34		888442500		2,930
	11	7.			X * 1			**************************************					9,710
	11	.10'			X	\$ 1 - S							3,170
	Ħ	15'		Х		-	-	-	-	- N.A. D. T. 818	- 15 15 1 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2	<u> </u>	1,250
	п	20'		Х		-	-	-	-	-	-		903
	11	25'		Х		-	-	-	-	-	_	-	228
	11	30'		Х		-	-	_	-	-	-		<200

(-) Not Analyzed

Removed soils

APPENDIX A INITIAL/FINAL C-141

S. Sales

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意思

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

State of New Mexico Energy Minerals and Natural Resources

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

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

Release Notification and Corrective Action

						OPERA:	FOR		Initi	al Report		Final Repor
Name of Co		COG OP				Contact		t Ellis				
Address				dland, TX 7970		Telephone 1		230-00				
Facility Nat	ne	RJU INJECT	TON TR	UNK-LINE		Facility Typ	e Tru	ınk-Lir	ne			
Surface Ow	ner Fec	leral		Mineral C	wner				Lease 1	Vo. (API#)	30-01	15-03765
					TIOI	OF RE						
Unit Letter	Section	Township	Range	Feet from the		South Line	Feet from the	1	West Line	County		
Α	34	175	29E	660	N	ORTH	654	E	EAST		EDDY	*
				Latitude 32		_	de 104 03.251					
Type of Rele	200	Produced	Water	INAL	UKL	OF RELI	Release 190bbls		Volume I	Recovered 1	30bbls	
Source of Re		2" Water floor		ine			lour of Occurrence			Hour of Dis		
						04/15/2010)		04/15/20		Op.m.	
Was Immedi	ate Notice (Jiven? ⊠	Yee F	No □ Not Re	mirad	If YES, To	Whom? Mike Bratche	or_AA^r	,			
		لكا	I CS L	1 100 CJ 110t 120	quirea		Terry Gregst					
By Whom?	Josh Ru					Date and H	our 04/15/201	0	9:01	p.m.		
Was a Water	course Read		Yes 🗵	No		If YES, Vo	lume Impacting t	he Wat	ercourse.			
If a Watercon	iree was Im	pacted, Descr	ihe Fully	F					·····			
	·			ilty fiber/poly trun	k line.	The entire lin	e is being remove	d and c	oi npletely r	eplaced.		
Describe Are	a Affected	and Cleanup A	Action Tal	ken.*								
and recovere sampling by Sec. 34-T17	d 130hbls o Tetra Tech S-R29E, Ed	of fluid. One-c (The spill sit dy Co. NM, A	call protoc e area is le .P1#30-01:		nd a sund vest of the	lry will be su he following:	bmitted for archer COG OPERATI	ological NG LL(l/wildlife s C, RJU UN	ensitivity cle IT #124, 660	earance FNL (e prior to soil 654 FEL.
regulations a public health should their or the enviro	Il operators for the envi operations in figure in a	are required to ronment. The nave failed to a	o report as acceptant adequately OCD accep	e is true and complind/or file certain rece of a C-141 report investigate and restance of a C-141 received.	elease no on by the emediate	otifications are NMOCD made contamination	nd perform correct arked as "Final Re on that pose a thre	tive acti eport" d eat to gr	ions for rele loes not reli round water	eases which eve the oper r, surface wa	may er ator of iter, hu	ndanger f liability man health
Signature:		2	ī	25			OIL CONS	SERV	ATION	DIVISIO	N	
Printed Nam	e:	Josh	Russo			Approved by	District Superviso	or:		Market and a second		
Title:		HSE C	oordinato	[Approval Dat	e:		Expiration	Date:		
E-mail Addr	ess:	jrusso@conc	horesour	ees.com	(Conditions of	Approval:			Attached		
	4/20/2010		Phone:	432-212-2399				· ·····				·
Attach Add	itional She	ets If Necess	arv									

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

Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

RECEIVED FEB 14 2011 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Form C-141 Revised October 10, 2003

Release Notification and Corrective Action

						OPERATOR				☐ Initial Report ☐ Final Report			
Name of Co						Contact Pa							
				ıd, Tx 79701			No. (432) 230-0	077					
Facility Na	ne KJU I	njection Tri	ink-Line	<u> </u>		Facility Typ	e Trunk-line					-	
Surface Ow	ner: Feder	ral		Mineral O	wner				Lease N	lo. (API #)	30-01	15-03765	
				LOCA	TIOI	N OF REI	LEASE						
Unit Letter	Section	Township	Range	Feet from the	North/	South Line	Feet from the	East/\	West Line	County	nty		
Α	34	17S	29E	660	North		654	East		Eddy			
		·	т	atitude N 32 47	7 701°	Longitud	w 104 03 23	13°					
			•			_		,5					
Type of Rele	ooo: Produc	red Water	····	NAT	UKE	OF RELI	EASE Release 190 bbl		Volume E	Recovered 1	20 kkl		
Source of Re		ccu water								Hour of Dis			
2" Water floo		· · · · · · · · · · · · · · · · · · ·				04/15/10				12:00 P.M			
Was Immedia	ate Notice (v 🗖	No 🖂 Not Door		If YES, To							
			Yes 🗌	No 🗌 Not Requ	ıırea	1	cher – OCD gston - BLM						
By Whom? Josh Russo							lour 04/15/10 9:	:01 P.M				-	
Was a Watercourse Reached?						If YES, Vo	lume Impacting t	he Wate	ercourse.				
☐ Yes ☒ No													
If a Watercou	ırse was lın	pacted, Descr	ibe Fully.	ķ.									
N/A													
Describe Cau	ise of Proble	em and Reme	dial Action	n Taken.*							 		
The leak was	caused by	a due to a fail	ire of a ne	wly installed fiber	/poly tr	unk line. The	e entire line was r	emoved	and replac	ed.			
Describe Are	a Affected	and Cleanup A	Action Tak	en.* Of the 190 t	bbls or	produced wat	er released, appro	ximatel	y 130 bbls	were recove	red wit	h a vacuum	
backfilled wi			neu me sn	e. Upon completion	on or un	e denneadon	, the site was exca	avated to	o a maximu	ım depin oi	i o ieet	ogs and	
I hereby certi	fy that the i	nformation gi	ven above	is true and comple	ete to th	ne best of my	knowledge and u	nderstai	nd that purs	uant to NM(DCD rt	iles and	
regulations al	ll operators	are required to	o report ar	d/or file certain re	lease no	otifications ar	nd perform correc	tive acti	ions for rele	eases which	may en	danger	
should their o	or the environs h	ave failed to a	acceptanc dequately	e of a C-141 repor investigate and re	n by the mediate	e contaminati	arked as "Final Ki on that pose a thre	eport a	oes not ren ound water	eve tne oper . surface wa	ator of ter. hui	nan health	
or the environ	nment. In a	ddition, NMC	CD accep	tance of a C-141 re									
federal, state,	or local lav	ws and/or regu	lations.		— Т		OH COM	arm x	AMION	DIVIGIO	. N. T.		
	\bigcirc II	1/1	3		}		OIL CONS	<u>SER V</u>	ATION	DIVISIO	<u>N</u>		
Signature: Thy Kmilly in ingest for COG					2								
Printed Name: Jeff Kindley (as agent for COG)					1	Approved by District Supervisor:			:				
Title: Senior	Title: Senior Project Manager				/	Approval Date:		Expiration Date:					
E-mail Address: jeff.kindley@tetratech.com					(Conditions of Approval:				Attached	П		
Date: 01/28/11 Phone: (432) 682-4559													

APPENDIX B WATER WELL REPORT

\$5 AB

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Water Well Data Average Depth to Groundwater (ft) COG - RJU Injection Line Eddy County, New Mexico

	16 9	South	2	8 East	į			16 Sc	outh	2	9 East		_		16 9	South	3	0 East	
3	5	4	3	2	1	7	6	5	4	3	2	1	1	6	5	4	3	2	1
	8	9	10	11	12	1	7	8	9	10	11	12	1	7	8	9 .	10	11	12
8	17	16	15	14	13	1	18	17	16	15	14	13	1	18	17	16	15	14	13
9	20	21 61	22	23	24	1	19 110	20	21	22	23	24		19	20	21	22	23	24
0	29	28	27	26	25	1	30	29	28	27	26	25	1	30	29	28	27	26	25
1	32	33	34	35	36	1	31	32	33	34	35	36		31	32	33	34	35	36
	17 :	South	2	8 East	 !			17 Sc	uth	2	9 East	<u> </u>		L	17 9	South	3() East	_
	5	4	3	2 27	1	1	6	5	4	3	2	1	1	6	5	4	3	2	1
	8	9	10	11	12	1	7	8	9	10	11	12	1	7	8	9	10	11	12
3	17	16	15	14 80	13	1	18	17	16	15	14	13	1	18	17	16	15	14	13
24	20	21	22 45	23	24	1	19	20	21	22 80	23	24		19	20	21	22	23	24
0	29	28	27	26	25	1	30	29 210	28	27	26	25	1	30	29	28	27	26	25
1	32	33	34 53	35	36	1	31	32	33	34 Site	35(dry) 153	36		31	32	33	34	35	36
	18 5	South	2	8 East	t	-		18 Sc	outh	2	9 East			*************************************	18 9	South	30) East	
	5	4	3	2	1	1	6	5	4	3	2	1]	6	5	4	3	2	1
	8 81	9	10	11	12	1	7	8	9	10	11	12		7	8	9	10	11	12
3	17	16	15	14	13	1	18	17	16	15	14	13		18	17	16	15	14	13
)	20	21	22	23	24	1	19	20	21	22	23	24	1	19	20	21	22	23	24
) 37	29	28	27	26 .	25	1	30	29	28	27	26	25		30	29	28	27	26	25
1	32	33	34	35	36	1	31	32	33	34	35	36	1	31	32	33	34	35	36

New Mexico State Engineers Well Reports

USGS Well Reports

Geology and Groundwater Conditions in Southern Eddy, County, NM

NMOCD - Groundwater Data

Field water level

New Mexico Water and Infrastructure Data System

APPENDIX C LABORATORY ANALYSIS



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WBENC: 237019

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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

Ike Tavarez Tetra Tech

1910 N. Big Spring Street Midland, TX, 79705

Report Date: May 5, 2010

Work Order: 10042912

Project Location: Eddy County, NM

Project Name:

COG/RJU Inj. Line Leak

Project Number:

114-6400502

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
229851	AH-1 0-1'	soil	2010-04-22	00:00	2010-04-28
229852	AH-1 1-1.5'	soil	2010-04-22	00:00	2010-04-28
229853	AH-1 2-2.5'	soil	2010-04-22	00:00	2010-04-28
229854	AH-1 3-3.5'	soil	2010-04-22	00:00	2010-04-28
229855	AH-1 4-4.5'	soil	2010-04-22	00:00	2010-04-28
229856	AH-1 5-5.5'	soil	2010-04-22	00:00	2010-04-28
229857	AH-1 5.5-6'	soil	2010-04-22	00:00	2010-04-28
229858	AH-2 0-1'	soil	2010-04-22	00:00	2010-04-28
229859	AH-2 1-1.5'	soil	2010-04-22	00:00	2010-04-28
229860	AH-2 2-2.5'	soil	2010-04-22	00:00	2010-04-28

	,		Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
229861	AH-2 3-3.5'	soil	2010-04-22	00:00	2010-04-28
229862	AH-2 4-4.5'	soil	2010-04-22	00:00	2010-04-28
229863	AH-2 4.5-5'	soil	2010-04-22	00:00	2010-04-28
229864	AH-3 0-1' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229865	AH-4 0-1', 1', BEB	soil	2010-04-22	00:00	2010-04-28
229866	AH-4 1-1.5' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229867	AH-4 2-2.5' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229868	AH-4 3-3.5' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229869	AH-4 4-4.5' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229870	AH-4 4.5-5' 1' BEB	soil	2010-04-22	00:00	2010-04-28
229871	AH-5 0-1' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229872	AH-5 1-1.5' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229873	AH-5 2-2.5' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229874	AH-5 3-3.5' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229875	AH-5 4-4.5' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229876	AH-5 5-5.5' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28
229877	AH-5 5.5-6' 0.5' BEB	soil	2010-04-22	00:00	2010-04-28

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

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

Standard Flags

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

Case Narrative

Samples for project COG/RJU Inj. Line Leak were received by TraceAnalysis, Inc. on 2010-04-28 and assigned to work order 10042912. Samples for work order 10042912 were received intact at a temperature of 4.0 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	59540	2010-04-29 at 15:40	69564	2010-04-29 at 14:39
Chloride (Titration)	SM 4500-Cl B	59556	2010-04-30 at 10:22	69667	2010-05-04 at 11:15
Chloride (Titration)	SM 4500-Cl B	59557	2010-04-30 at 10:23	69668	2010-05-04 at 11:16
Chloride (Titration)	SM 4500-Cl B	59558	2010-04-30 at 10:23	69669	2010-05-04 at 11:18
Chloride (Titration)	SM 4500-Cl B	59559	2010-04-30 at 10:24	69670	2010-05-04 at 11:19
TPH DRO - NEW	Mod. 8015B	59537	2010-04-29 at 15:07	69560	2010-04-29 at 15:07
TPH DRO - NEW	Mod. 8015B	59614	2010-05-03 at 16:01	69648	2010-05-03 at 16:01
TPH GRO	S 8015B	59540	2010-04-29 at 15:40	69565	2010-04-29 at 15:07

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 10042912 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.

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak

Analytical Report

Sample: 229851 - AH-1 0-1'

Laboratory: Midland

Analysis: BTEX 69564 QC Batch: Prep Batch: 59540

Analytical Method: Date Analyzed:

S 8021B 2010-04-29 Sample Preparation: 2010-04-29 Prep Method: S 5035

Page Number: 4 of 29

Eddy County, NM

Analyzed By: AGPrepared By: AG

RL.

		1017			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	ı	1.04	mg/Kg	1	2.00	52	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		0.951	mg/Kg	1	2.00	48	43.1 - 158.4

Sample: 229851 - AH-1 0-1'

Laboratory: Midland

Chloride (Titration) Analysis: QC Batch: 69667 Prep Batch: 59556

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-05-04 Sample Preparation: 2010-04-30

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		2540	mg/Kg	100	4.00

Sample: 229851 - AH-1 0-1'

Laboratory:

Midland

Analysis: TPH DRO - NEW QC Batch: 69560 Prep Batch: 59537

Analytical Method: Date Analyzed:

Mod. 8015B 2010-04-29 Sample Preparation: 2010-04-29

Prep Method: N/A Analyzed By: kg

kg

Prepared By:

RL

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

¹SPECIAL - TFT is out of control limits due an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 5 of 29 Eddy County, NM

G .	T	TD 1:	T T **	יי ויי	Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		87.3	mg/Kg	1	100	87	70 - 130

Sample: 229851 - AH-1 0-1'

Laboratory:

Midland

Analysis: QC Batch: TPH GRO

69565 Prep Batch: 59540 Analytical Method: Date Analyzed:

S 8015B

2010-04-29 Sample Preparation: 2010-04-29 Prep Method: Analyzed By:

S 5035

Prepared By:

AGAG

Units

RLParameter Result Flag Dilution RLGRO <1.00 mg/Kg $\overline{1}$ 1.00

			3		Spike	Percent	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.04	mg/Kg	1	2.00	52	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.08	mg/Kg	1	2.00	54	51.7 - 131.1

Sample: 229852 - AH-1 1-1.5'

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

Analytical Method: Date Analyzed:

7690

SM 4500-Cl B

Prep Method:

N/A AR

69667 Prep Batch: 59556

Sample Preparation:

2010-05-04 2010-04-30

Units

mg/Kg

Analyzed By:

Prepared By: AR

Result

Parameter Flag Chloride

RL

Dilution

100

RL

4.00

Sample: 229853 - AH-1-2-2.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch:

69667 59556

Sample Preparation:

2010-05-04

Prepared By: AR

2010-04-30

RLDilution Parameter Flag Result Units RL4750 Chloride mg/Kg 100 4.00

Report Date: May 5, 2010 Work Order: 10042912 Page Number: 6 of 29 114-6400502 COG/RJU Inj. Line Leak Eddy County, NM Sample: 229854 - AH-1 3-3.5' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 69667 Date Analyzed: 2010-05-04 Analyzed By: AR59556 Sample Preparation: Prepared By: ARPrep Batch: 2010-04-30 RLDilution RLParameter Flag Result Units 3890 100 4.00 Chloride mg/Kg Sample: 229855 - AH-1 4-4.5' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 69667 Date Analyzed: 2010-05-04 Analyzed By: ARPrep Batch: 59556 Sample Preparation: 2010-04-30 Prepared By: ARRLParameter RLFlag Result Units Dilution Chloride 5190 mg/Kg 100 4.00Sample: 229856 - AH-1 5-5.5' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 69668 ARDate Analyzed: 2010-05-04 Analyzed By: Prep Batch: 59557 Sample Preparation: 2010-04-30 Prepared By: ARRLDilution RLParameter Flag Result Units Chloride 11900 mg/Kg 100 4.00 Sample: 229857 - AH-1 5.5-6'

Analytical Method:

Sample Preparation:

Date Analyzed:

RL

Result

14700

SM 4500-Cl B

2010-05-04

2010-04-30

Units

mg/Kg

Prep Method:

Analyzed By:

Prepared By:

Dilution

100

N/A

AR

AR

RL

4.00

Laboratory:

Analysis:

QC Batch:

Parameter

Chloride

Prep Batch:

Midland

69668

59557

Chloride (Titration)

Flag

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 7 of 29 Eddy County, NM

Sample: 229858 - AH-2 0-1'

Laboratory: Midland

BTEX Analysis: 69564 QC Batch: Prep Batch: 59540

Analytical Method: Date Analyzed:

S 8021B 2010-04-29 Sample Preparation: 2010-04-29 Prep Method: S 5035 Analyzed By: AGPrepared By: AG

RL

		J. U.J.			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	. 1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.38	mg/Kg	1	2.00	69	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.27	$_{ m mg/Kg}$	1	2.00	64	43.1 - 158.4

Sample: 229858 - AH-2 0-1'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 69668 Prep Batch: 59557

Analytical Method: SM 4500-Cl B Date Analyzed:

2010-05-04 Sample Preparation: 2010-04-30

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		6040	mg/Kg	100	4.00

Sample: 229858 - AH-2 0-1'

Midland Laboratory:

TPH DRO - NEW Analysis:

QC Batch: 69560 Prep Batch: 59537

Analytical Method: Date Analyzed:

Mod. 8015B 2010-04-29 Sample Preparation: 2010-04-29

N/A Prep Method: Analyzed By: kg

kg

Prepared By:

RL

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		85.9	mg/Kg	1	100	86	70 - 130

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 8 of 29 Eddy County, NM

Sample: 229858 - AH-2 0-1'

Laboratory:

Midland

Analysis: TPH GRO QC Batch: 69565

Prep Batch: 59540

Analytical Method: Date Analyzed:

S 8015B2010-04-29

Sample Preparation: 2010-04-29

Prep Method: S 5035 Analyzed By: AGPrepared By:

AG

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Burrogate	riag	itcourt	O11163	Dittion	Amount	recovery	Limitos
Trifluorotoluene (TFT)		1.39	$_{ m mg/Kg}$	1	2.00	70	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.40	mg/Kg	1	2.00	70	51.7 - 131.1

Sample: 229859 - AH-2 1-1.5'

Laboratory:

Prep Batch:

Midland

Analysis: QC Batch:

Chloride (Titration)

69668 59557

Analytical Method:

Date Analyzed:

SM 4500-Cl B 2010 - 05 - 042010-04-30

Prep Method: Analyzed By:

N/A ARPrepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	hoRL
Chloride		6800	mg/Kg	100	4.00

Sample Preparation:

Sample: 229860 - AH-2 2-2.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: 69668 Prep Batch: 59557

Analytical Method: Date Analyzed:

2010-04-30

SM 4500-Cl B 2010-05-04

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

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		4300	mg/Kg	100	4.00

Sample Preparation:

Sample: 229861 - AH-2 3-3.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: 69668 Prep Batch: 59557 Analytical Method:

SM 4500-Cl B 2010-05-04

Prep Method: Analyzed By:

N/A ARAR

Date Analyzed: Sample Preparation: 2010-04-30

Prepared By:

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 9 of 29 Eddy County, NM

		RL	•		
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3970	mg/Kg	100	4.00

Sample: 229862 - AH-2 4-4.5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

69668

Analytical Method:

SM 4500-Cl B 2010-05-04

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch: 59557

Date Analyzed: Sample Preparation: 2010-04-30

Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		8870	mg/Kg	100	4.00

Sample: 229863 - AH-2 4.5-5'

Laboratory:

Midland

Analysis:

Chloride (Titration)

69668

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch: 59557

Date Analyzed: Sample Preparation: 2010-04-30

2010-05-04

Analyzed By: ARPrepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		11700	mg/Kg	100	4.00

Sample: 229864 - AH-3 0-1' 1' BEB

Laboratory: Midland

Analysis: QC Batch: Prep Batch: 59540

BTEX 69564

Analytical Method:

S 8021B 2010-04-29

Prep Method: S 5035

Date Analyzed: Sample Preparation: 2010-04-29

RL

Analyzed By: AGPrepared By: AG

Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		0.0976	mg/Kg	1	0.0100

 $continued \dots$

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 10 of 29 Eddy County, NM

sample continued ...

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	2	1.09	mg/Kg	1	2.00	54	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	2.00	50	43.1 - 158.4

Sample: 229864 - AH-3 0-1' 1' BEB

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

69668

Date Analyzed:

2010-05-04

Analyzed By: AR

Prep Batch:

59557

Sample Preparation:

2010-04-30

Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		8200	, mg/Kg	100	4.00

Sample: 229864 - AH-3 0-1' 1' BEB

Laboratory:

Midland

Analysis:

TPH DRO - NEW

Analytical Method:

Mod. 8015B

Prep Method: N/A

QC Batch:

69560 Prep Batch: 59537 Date Analyzed:

2010-04-29 2010-04-29

Analyzed By: kg Prepared By:

Sample Preparation:

RLDilution Result Units Parameter Flag RLDRO < 50.0 mg/Kg 50.0

					\mathbf{S} pike	Percent	$\operatorname{Recovery}$
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		98.6	mg/Kg	1	100	99	70 - 130

Sample: 229864 - AH-3 0-1' 1' BEB

Laboratory:

Midland

Analysis:

TPH GRO

Analytical Method:

S 8015B 2010-04-29 Prep Method: S 5035 Analyzed By:

QC Batch: 69565 Prep Batch: 59540

Date Analyzed: Sample Preparation: 2010-04-29

AGPrepared By: AG

RLUnitsParameter Flag Result Dilution RL< 1.00 GRO mg/Kg 1.00

²SPECIAL - TFT is out of control limits due an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 11 of 29 Eddy County, NM

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.08	mg/Kg	1	2.00	54	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.14	mg/Kg	1	2.00	57	51.7 - 131.1

Sample: 229865 - AH-4 0-1' 1' BEB

Laboratory:

Midland

Analysis: QC Batch:

Prep Batch: 59540

BTEX 69564

Analytical Method:

S 8021B Date Analyzed:

2010-04-29 Sample Preparation: 2010-04-29 Prep Method: S 5035 Analyzed By: AG

AG

Prepared By:

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Benzene		< 0.0500	mg/Kg	5	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0500	mg/Kg	5	0.0100
Xylene		< 0.0500	mg/Kg	5	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		5.39	mg/Kg	5	5.00	108	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		4.89	mg/Kg	<u>5</u>	5.00	98	43.1 - 158.4

Sample: 229865 - AH-4 0-1', 1', BEB

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-05-04

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch: 69668

Sample Preparation:

AR

59557

2010-04-30

Prepared By:

RLRLParameter Flag Result Units Dilution 5530 100 4.00Chloride mg/Kg

Sample: 229865 - AH-4 0-1' 1' BEB

Laboratory: Midland

Analysis:

TPH DRO - NEW

Analytical Method: Date Analyzed:

Mod. 8015B

Prep Method:

N/A

QC Batch: Prep Batch:

69560 59537

Sample Preparation:

2010-04-29 2010-04-29

kg Analyzed By: Prepared By: kg

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 12 of 29 Eddy County, NM

		RL			
Parameter	Flag	Result	Units	Dilution	RL
DRO		150	mg/Kg	1	50.0
			Sp	ike Percent	Recovery

					эріке	Percent	necovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane	3	134	mg/Kg	1	100	134	70 - 130

Sample: 229865 - AH-4 0-1' 1' BEB

Laboratory: Midland

Analysis: TPH GRO QC Batch: 69565 Prep Batch: 59540

Analytical Method: S 8015B Date Analyzed:

2010-04-29 Sample Preparation: 2010-04-29 Prep Method: S 5035 Analyzed By: \mathbf{AG}

Prepared By: \mathbf{AG}

		RL			
Parameter	Flag	Result	Units	Dilution	RL
GRO		< 5.00	mg/Kg	5	1.00

					Spike	Percent	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		5.42	mg/Kg	5	5.00	108	50.3 - 155
4-Bromofluorobenzene (4-BFB)		5.36	mg/Kg	5	5.00	107	51.7 - 131.1

Sample: 229866 - AH-4 1-1.5' 1' BEB

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 69669 Prep Batch: 59558

Analytical Method:

Sample Preparation:

Date Analyzed:

SM 4500-Cl B 2010-05-04

Prep Method: N/A Analyzed By: AR

AR

N/A

2010-04-30 Prepared By:

RL

RLParameter Result Units Dilution Flag 5080 100 Chloride mg/Kg 4.00

Sample: 229867 - AH-4 2-2.5' 1' BEB

Laboratory:

Midland

59558

Analysis: QC Batch: 69669 Prep Batch:

Chloride (Titration)

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2010-05-04

Prep Method: Analyzed By:

2010-04-30

ARPrepared By: AR

 $continued \dots$

³High surrogate recovery due to peak interference.

Page Number: 13 of 29 Report Date: May 5, 2010 Work Order: 10042912 Eddy County, NM 114-6400502 COG/RJU Inj. Line Leak sample 229867 continued ... RLRLParameter Flag Result Units Dilution RLRLParameter Flag Result Units Dilution Chloride 5530 mg/Kg 100 4.00 Sample: 229868 - AH-4 3-3.5' 1' BEB Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/AQC Batch: 69669 Analyzed By: ARDate Analyzed: 2010-05-04 Prep Batch: 59558 Sample Preparation: 2010-04-30 Prepared By: ARRLFlag RLParameter Result Units Dilution Chloride 5560 mg/Kg 100 4.00Sample: 229869 - AH-4 4-4.5' 1' BEB Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 69669 ARDate Analyzed: 2010-05-04 Analyzed By: Prep Batch: 59558 Sample Preparation: Prepared By: AR2010-04-30 RLParameter Units Dilution RLFlag Result 4.00 Chloride 7450 mg/Kg 100 Sample: 229870 - AH-4 4.5-5' 1' BEB Laboratory: Midland

Analytical Method:

Sample Preparation:

Date Analyzed:

RL

Result

9490

SM 4500-Cl B

2010-05-04

2010-04-30

Units

mg/Kg

Prep Method:

Analyzed By:

Prepared By:

Dilution

100

N/A

AR

AR

RL

4.00

Analysis:

QC Batch:

Parameter

Chloride

Prep Batch:

Chloride (Titration)

Flag

69669

59558

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 14 of 29 Eddy County, NM

Sample: 229871 - AH-5 0-1' 0.5' BEB

Laboratory: Midland

Analysis: BTEX QC Batch: 69564

Analytical Method: Date Analyzed:

S 8021B 2010-04-29 Prep Method: S 5035 Analyzed By: AG

Prep Batch: 59540

Sample Preparation: 2010-04-29

Prepared By: AG

RL

Parameter	Flag	Result	Units	Dilution	\mathbf{RL}
Benzene		< 0.0100	mg/Kg	1	0.0100
Toluene		< 0.0100	mg/Kg	1	0.0100
Ethylbenzene		< 0.0100	mg/Kg	1	0.0100
Xylene		< 0.0100	mg/Kg	1	0.0100

					Spike	Percent	Recovery
Surrogate	Flag	Result	$\mathbf{U}\mathbf{nits}$	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	60.4 - 141.2
4-Bromofluorobenzene (4-BFB)		1.74	mg/Kg	1	2.00	87	43.1 - 158.4

Sample: 229871 - AH-5 0-1' 0.5' BEB

Laboratory: Midland

Analysis: QC Batch:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

Analyzed By: AR

Prep Batch: 59558

69669

Date Analyzed: Sample Preparation:

2010-05-04 2010-04-30

Prepared By: AR

DΤ

	T-1	1615	TT **	D.1	D.T.
Parameter	Flag	Result	Units	Dilution	KL_
Chloride		2340	mg/Kg	100	4.00

Sample: 229871 - AH-5 0-1' 0.5' BEB

Laboratory:

Midland

Analysis:

TPH DRO - NEW

Analytical Method:

Mod. 8015B

Prep Method: N/A

Analyzed By: kg

QC Batch: Prep Batch: 59614

69648

Date Analyzed: Sample Preparation: 2010-05-03

2010-05-03

Prepared By:

kg

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

					Spike	$\mathbf{Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		83.1	mg/Kg	1	100	83	70 - 130

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 15 of 29 Eddy County, NM

Sample: 229871 - AH-5 0-1' 0.5' BEB

Laboratory:

Midland

Analysis: QC Batch: TPH GRO

69565

Analytical Method: Date Analyzed:

S 8015B

2010-04-29

Prep Method: S 5035 Analyzed By: AG

Prep Batch:

59540

Sample Preparation: 2010-04-29

Prepared By:

AG

N/A

AR

AR

N/A

AR

RL

Parameter	Flag	Result	Units	Dilution	RL
GRO		<1.00	mg/Kg	1	1.00

					Spike	${f Percent}$	$\operatorname{Recovery}$
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.92	mg/Kg	1	2.00	96	50.3 - 155
4-Bromofluorobenzene (4-BFB)		1.90	mg/Kg	1	2.00	95	51.7 - 131.1

Sample: 229872 - AH-5 1-1.5' 0.5' BEB

Laboratory:

Midland

Analysis:

Chloride (Titration)

QC Batch: Prep Batch: 59558

69669

Analytical Method:

Date Analyzed: Sample Preparation: SM 4500-Cl B 2010-05-04

2010-04-30

Prep Method: Analyzed By: Prepared By:

RL

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		414	mg/Kg	50	4.00

Sample: 229873 - AH-5 2-2.5' 0.5' BEB.

Laboratory:

Midland

Analysis: QC Batch:

Chloride (Titration) 69669 Prep Batch: 59558

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-05-04 Sample Preparation: 2010-04-30

Prep Method: Analyzed By:

ARPrepared By: AR

Parameter Flag Result RLUnits Dilution Chloride 424 mg/Kg 50 4.00

Sample: 229874 - AH-5 3-3.5' 0.5' BEB

Laboratory:

Midland

Analysis: Chloride (Titration) QC Batch: 69669

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-05-04

Prep Method: N/A Analyzed By: AR

Prep Batch: 59558

Sample Preparation: 2010-04-30

Prepared By:

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 16 of 29

Eddy County, NM

		RL
1731	т.	7.

Result Units Dilution RLParameter Flag Chloride 475 mg/Kg 50 4.00

Sample: 229875 - AH-5 4-4.5' 0.5' BEB

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A

QC Batch:

69669

Date Analyzed:

2010-05-04

Analyzed By: AR

Prep Batch: 59558

Sample Preparation:

2010-04-30

Prepared By:

RL

Parameter Chloride

Result 485

Units

Dilution

AR

Flag

mg/Kg

50

RL4.00

Sample: 229876 - AH-5 5-5.5' 0.5' BEB

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method:

QC Batch:

69670

Date Analyzed:

2010-05-04

Analyzed By:

Prep Batch: 59559

Sample Preparation: 2010-05-04

Prepared By:

N/A AR AR

RL

Parameter Flag Result Units Dilution RLChloride 864 mg/Kg 50 4.00

Sample: 229877 - AH-5 5.5-6' 0.5' BEB

Laboratory:

Analysis:

Midland

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method:

N/A

QC Batch:

69670

Date Analyzed:

2010-05-04

Analyzed By:

Prep Batch: 59559

Sample Preparation: 2010-05-04

Prepared By:

AR

AR

RLParameter Flag Result Units Dilution RLChloride 1470 mg/Kg 50 4.00

Method Blank (1)

Prep Batch: 59537

QC Batch: 69560

QC Batch:

69560

Date Analyzed: QC Preparation:

2010-04-29 2010-04-29 Analyzed By: kg

Prepared By:

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 17 of 29 Eddy County, NM

				MDL				
Parameter	Flag			Result		${f Units}$		
DRO				7.58	58 mg/Kg			
					Spike	Percent	Recovery	
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits	
n-Tricosane		75.6	mg/Kg	1	100	76	70 - 130	

Method Blank (1)

QC Batch: 69564

QC Batch: Prep Batch: 59540

69564

Date Analyzed:

2010-04-29 QC Preparation: 2010-04-29

Analyzed By: AG Prepared By: AG

MDLParameter Flag Result Units RLBenzene < 0.00410 mg/Kg 0.01 Toluene mg/Kg 0.01< 0.00310 Ethylbenzene 0.01< 0.00240 mg/Kg Xylene < 0.00650 mg/Kg 0.01

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	$\mathbf{A}\mathbf{mount}$	Recovery	Limits
Trifluorotoluene (TFT)		1.98	mg/Kg	1	2.00	99	64.9 - 142.7
4-Bromofluorobenzene (4-BFB)		1.83	mg/Kg	1	2.00	92	43.9 - 141.9

Method Blank (1)

QC Batch: 69565

QC Batch: Prep Batch:

69565 59540 Date Analyzed:

2010-04-29 QC Preparation: 2010-04-29 Analyzed By: AG Prepared By:

MDL Flag Parameter Result GRO < 0.396

RL

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.96	mg/Kg	1	2.00	98	66.2 - 145
4-Bromofluorobenzene (4-BFB)		2.00	mg/Kg	1	2.00	100	62 - 120.5

Method Blank (1)

QC Batch: 69648

QC Batch:

69648

Prep Batch: 59614

Date Analyzed:

2010-05-03

Analyzed By: kg

QC Preparation: 2010-05-03 Prepared By:

Units

mg/Kg

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 18 of 29 Eddy County, NM

MDL Result RLFlag Units Parameter $\overline{\text{DRO}}$ 9.08 mg/Kg 50 Spike Percent Recovery Flag Result Units Dilution Amount Recovery Limits Surrogate 70 - 130 n-Tricosane $73.\overline{4}$ mg/Kg 1 100 73

Method Blank (1)

QC Batch: 69667

QC Batch: 69667 Prep Batch: 59556

Date Analyzed: QC Preparation: 2010-04-30

2010-05-04

Analyzed By: AR Prepared By:

MDL Parameter Result Flag Units RL

< 2.18

Method Blank (1)

Chloride

QC Batch: 69668

QC Batch: 69668 Date Analyzed:

2010-05-04

Analyzed By: AR

Prep Batch: 59557

QC Preparation: 2010-04-30 Prepared By: AR

MDLParameter Flag Result Units RLChloride < 2.18 mg/Kg 4

Method Blank (1)

QC Batch: 69669

QC Batch: Prep Batch:

69669 59558 Date Analyzed:

2010-05-04

Analyzed By: ARAR

QC Preparation:

2010-04-30 Prepared By:

mg/Kg

MDL Parameter Flag Result Units RLChloride < 2.18 mg/Kg 4

Method Blank (1)

QC Batch: 69670

QC Batch: Prep Batch: 59559

69670

Date Analyzed:

2010-05-04

Analyzed By: AR

QC Preparation:

2010-04-30

Prepared By: AR

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 19 of 29

Eddy County, NM

		MDL		
Parameter	Flag	Result	Units	RL
Chloride		<2.18	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch:

69560

Date Analyzed:

2010-04-29

Analyzed By: kg

Prep Batch: 59537

QC Preparation: 2010-04-29

Prepared By:

	LCS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	267	mg/Kg	1	250	< 5.86	107	57.4 - 133.4

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

	LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	250	mg/Kg	1	250	< 5.86	100	57.4 - 133.4	7	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	90.4	89.6	mg/Kg	1	100	90	90	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

69564

Prep Batch: 59540

Date Analyzed:

2010-04-29

QC Preparation: 2010-04-29

Analyzed By: AG

Prepared By: AG

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene	1.87	mg/Kg	1	2.00	< 0.00410	94	75.4 - 115.7
Toluene	1.87	mg/Kg	1	2.00	< 0.00310	94	78.4 - 113.6
Ethylbenzene	1.83	mg/Kg	1	2.00	< 0.00240	92	76 - 114.2
Xylene	5.54	mg/Kg	1	6.00	< 0.00650	92	76.9 - 113.6

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
Benzene	1.98	mg/Kg	1	2.00	< 0.00410	99	75.4 - 115.7	6	20
Toluene	1.98	mg/Kg	1	2.00	< 0.00310	99	78.4 - 113.6	6	20
Ethylbenzene	1.96	mg/Kg	1	2.00	< 0.00240	98	76 - 114.2	7	20
Xylene	5.90	mg/Kg	1	6.00	< 0.00650	98	76.9 - 113.6	6	20

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 20 of 29

Eddy County, NM

Surrogate	LCS Result	$\begin{array}{c} { m LCSD} \\ { m Result} \end{array}$	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.75	1.86	mg/Kg	1	2.00	88	93	65 - 142.9
4-Bromofluorobenzene (4-BFB)	1.73	1.81	mg/Kg	1	2.00	86	90	43.8 - 144.9

Laboratory Control Spike (LCS-1)

QC Batch:

69565

Date Analyzed:

2010-04-29

Analyzed By: AG Prepared By: AG

Prep Batch: 59540

QC Preparation: 2010-04-29

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
GRO	17.4	mg/Kg	1	20.0	< 0.396	87	52.5 - 114.3

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

	LCSD			$_{ m Spike}$	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	17.6	mg/Kg	1	20.0	< 0.396	88	52.5 - 114.3	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	$\mathrm{Rec}.$	Rec.	Limit
Trifluorotoluene (TFT)	1.84	1.91	mg/Kg	1	2.00	92	96	66.2 - 148.7
4-Bromofluorobenzene (4-BFB)	1.91	2.00	mg/Kg	1	2.00	96	100	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch:

69648

Prep Batch: 59614

Date Analyzed:

2010-05-03

QC Preparation: 2010-05-03

Analyzed By: kg

kg

Prepared By:

DRO	261	mg/Kg	1	250	< 5.86	104	57.4 - 133.4
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
	LCS			Spike	Matrix		Rec.

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.	$_{ m Limit}$	RPD	Limit
DRO	262	mg/Kg	1	250	< 5.86	105	57.4 - 133.4	0	20

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	88.3	86.9	mg/Kg	1	100	88	87	70 - 130

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 21 of 29

Eddy County, NM

Laboratory Control Spike (LCS-1)

QC Batch:

69667 Prep Batch: 59556 Date Analyzed:

2010-05-04

QC Preparation: 2010-04-30

Analyzed By: AR

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	$\mathrm{Rec}.$	\mathbf{Limit}
Chloride	101	mg/Kg	1	100	< 2.18	101	85 - 115

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

	LCSD			\mathbf{S} pike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	103	mg/Kg	1	100	<2.18	103	85 - 115	2	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:

69668 Prep Batch: 59557 Date Analyzed:

2010-05-04

QC Preparation: 2010-04-30

Analyzed By: AR.

Prepared By: AR

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	${ m Rec.}$	$\mathbf{L}_{\mathbf{imit}}$
Chloride	98.1	mg/Kg	1	100	< 2.18	98	85 - 115

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

	LCSD			$\mathbf{S}_{\mathbf{P}i\mathbf{k}\mathbf{e}}$	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	99.9	mg/Kg	1	100	< 2.18	100	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 59558

69669

Date Analyzed:

2010-05-04

QC Preparation: 2010-04-30

Analyzed By: AR

Prepared By: AR

	LCS			\mathbf{S} pike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	$\mathrm{Rec}.$	Limit
Chloride	98.0	mg/Kg	1	100	<2.18	98	85 - 115

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

	LCSD			Spike	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec .	Limit	RPD	Limit
Chloride	99.8	mg/Kg	1	100	< 2.18	100	85 - 115	2	20

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 22 of 29 Eddy County, NM

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:

Param

Chloride

A 100

69670 59559 Date Analyzed:

Units

mg/Kg

2010-05-04

QC Preparation: 2010-04-30 Analyzed By: AR AR

Prepared By:

LCS Result 98.6

Spike

Amount

100

Dil.

1

RPD

1

Matrix

Result

< 2.18

Rec.

Limit

85 - 115

Rec. Limit Rec. 99 85 - 115

RPD

Limit

20

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

LCSD Spike Matrix Result Param Units Dil. Amount Result Rec. Chloride 100 mg/Kg 1 100 < 2.18100

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

Matrix Spike (MS-1)

Spiked Sample: 229865

QC Batch:

69560

Date Analyzed:

2010-04-29

Analyzed By: kg

Prepared By: kg

Prep Batch: 59537

QC Preparation:

2010-04-29

	MS			$_{ m Spike}$	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	284	mg/Kg	1	250	150	54	35.2 - 167.1

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	340	mg/Kg	1	250	150	76	35.2 - 167.1	18	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
n-Tricosane	121	117	mg/Kg	1	100	121	117	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 229858

QC Batch:

69564

Date Analyzed:

2010-04-29

Analyzed By: AG

Prep Batch:

59540

QC Preparation:

2010-04-29

Prepared By: AG

MS Spike Matrix Rec. Param Result Units Dil. Result Limit Amount Rec. Benzene 1.90 mg/Kg 1 2.00< 0.0041095 57.7 - 140.7 Toluene 1.97 mg/Kg 1 2.00 < 0.00310 98 53.4 - 146.6

 $continued \dots$

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 23 of 29 Eddy County, NM

matrix spikes continued ...

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Ethylbenzene	1.98	mg/Kg	1	2.00	< 0.00240	99	62.1 - 141.6
Xylene	5.95	${ m mg/Kg}$	1	6.00	< 0.00650	99	61.2 - 142.7

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	\mathbf{Limit}
Benzene	2.31	mg/Kg	1	2.00	< 0.00410	116	57.7 - 140.7	20	20
Toluene	2.38	mg/Kg	1	2.00	< 0.00310	119	53.4 - 146.6	19	20
Ethylbenzene	2.37	mg/Kg	1	2.00	< 0.00240	118	62.1 - 141.6	18	20
Xylene	7.17	mg/Kg	1	6.00	< 0.00650	120	61.2 - 142.7	19	20

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

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.30	1.71	mg/Kg	1	2	65	86	61.7 - 139.6
4-Bromofluorobenzene (4-BFB)	1.25	1.61	mg/Kg	1	2	62	80	49.6 - 146.7

Matrix Spike (MS-1) Spiked Sample: 229837

QC Batch:

69565

Date Analyzed:

2010-04-29

Analyzed By: AG Prepared By: AG

Prep Batch: 59540

QC Preparation: 2010-04-29

	MS			Spike	Matrix		${ m Rec.}$
Param _	Result	Units	Dil.	Amount	Result	Rec .	Limit
GRO	17.1	mg/Kg	1	20.0	< 0.396	86	10 - 198.3

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	18.7	mg/Kg	1	20.0	< 0.396	94	10 - 198.3	9	20

		MS	MSD			Spike	MS	MSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	4	1.96	0.796	mg/Kg	1	2	98	40	65.5 - 143
4-Bromofluorobenzene (4-BFB)	5	2.09	0.983	mg/Kg	1	2	104	49	58.6 - 140

⁴Surrogate out due to peak interference.

⁵Surrogate out due to peak interference.

114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 24 of 29 Eddy County, NM

Matrix Spike (MS-1)

Spiked Sample: 230038

QC Batch:

69648 Prep Batch: 59614 Date Analyzed:

2010-05-03

QC Preparation:

Analyzed By: kg

2010-05-03

Prepared By:

	MS			Spike	Matrix		$\mathrm{Rec}.$
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
DRO	222	mg/Kg	1	250	< 5.86	89	35.2 - 167.1

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

	MSD			\mathbf{Spike}	Matrix		$\mathrm{Rec}.$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	234	mg/Kg	1	250	< 5.86	94	35.2 - 167.1	5	20

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

	MS	MSD			Spike	MS	MSD	${ m Re}c.$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	\mathbf{Limit}
n-Tricosane	76.0	78.2	mg/Kg	1	100	76	78	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 229855

QC Batch:

69667 Prep Batch: 59556 Date Analyzed:

2010-05-04 QC Preparation: 2010-04-30

Analyzed By:

AR Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	15800	mg/Kg	100	10000	5190	106	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	16000	mg/Kg	100	10000	5190	108	85 - 115	1	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: 229865

QC Batch: Prep Batch: 59557

69668

Date Analyzed:

QC Preparation: 2010-04-30

2010-05-04 Analyzed By: AR

Prepared By: AR

MS Rec. Spike Matrix Param Result Units Dil. Result Limit Amount Rec. 15700 Chloride mg/Kg 100 10000 5530 102 85 - 115

114 - 6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 25 of 29 Eddy County, NM

Param	$rac{ ext{MSD}}{ ext{Result}}$	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	16000	mg/Kg	100	10000	5530	105	85 - 115	2	20

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

Matrix Spike (MS-1)

Spiked Sample: 229875

QC Batch:

69669

Date Analyzed:

2010-05-04

Analyzed By: AR

Prep Batch: 59558

QC Preparation: 2010-04-30

Prepared By: AR

	MS			$_{ m Spike}$	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride	10500	mg/Kg	100	10000	485	100	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	10800	mg/Kg	100	10000	485	103	85 - 115	3	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: 229926

QC Batch:

69670

Date Analyzed:

2010-05-04

Analyzed By: AR

Prep Batch: 59559

QC Preparation: 2010-04-30

Prepared By: AR

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	${ m Rec.}$	Limit
Chloride	10400	mg/Kg	100	10000	<218	104	85 - 115

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

	MSD			$\mathbf{S}_{\mathbf{P}i\mathbf{k}\mathbf{e}}$	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	10600	mg/Kg	100	10000	<218	106	85 - 115	2	20

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

Standard (CCV-1)

QC Batch: 69560

Date Analyzed: 2010-04-29

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
•			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	229	92	80 - 120	2010-04-29

114 - 6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 26 of 29 Eddy County, NM

Standard (CCV-2)

QC Batch: 69560

Date Analyzed: 2010-04-29

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	254	102	80 - 120	2010-04-29

Standard (CCV-3)

QC Batch: 69560

Date Analyzed: 2010-04-29

Analyzed By: kg

			CCVs True	CCVs Found	$rac{ ext{CCVs}}{ ext{Percent}}$	Percent Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	276	110	80 - 120	2010-04-29

Standard (CCV-1)

QC Batch: 69564

Date Analyzed: 2010-04-29

.Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0965	96	80 - 120	2010-04-29
Toluene		mg/Kg	0.100	0.0953	95	80 - 120	2010-04-29
Ethylbenzene		mg/Kg	0.100	0.0906	91	80 - 120	2010-04-29
Xylene		mg/Kg	0.300	0.274	91	80 - 120	2010-04-29

Standard (CCV-2)

QC Batch: 69564

Date Analyzed: 2010-04-29

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0944	94	80 - 120	2010-04-29
Toluene		mg/Kg	0.100	0.0939	94	80 - 120	2010-04-29
Ethylbenzene		mg/Kg	0.100	0.0917	92	80 - 120	2010-04-29
Xylene		mg/Kg	0.300	0.275	92	80 - 120	2010-04-29

Standard (CCV-3)

QC Batch: 69564

Date Analyzed: 2010-04-29

Analyzed By: AG

114-6400502

Work Order: 10042912

Page Number: 27 of 29

COG/RJU Inj. Line Leak 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	0.0961	96	80 - 120	2010-04-29
Toluene		mg/Kg	0.100	0.0959	96	80 - 120	2010-04-29
Ethylbenzene		mg/Kg	0.100	0.0944	94	80 - 120	2010-04-29
Xylene		mg/Kg	0.300	0.283	94	80 - 120	2010-04-29

Standard (CCV-1)

QC Batch: 69565

Date Analyzed: 2010-04-29

Analyzed By: AG

			CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.05	105	80 - 120	2010-04-29

Standard (CCV-2)

QC Batch: 69565

Date Analyzed: 2010-04-29

Analyzed By: AG

			$rac{ ext{CCVs}}{ ext{True}}$	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.946	95	80 - 120	2010-04-29

Standard (CCV-3)

QC Batch: 69565

Date Analyzed: 2010-04-29

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	_
			True	Found	Percent	$\operatorname{Recovery}$	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO	-	mg/Kg	1.00	0.986	99	80 - 120	2010-04-29

Standard (CCV-1)

QC Batch: 69648

Date Analyzed: 2010-05-03

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	275	110	80 - 120	2010-05-03

Report Date: May 5, 2010 114-6400502

Work Order: 10042912 COG/RJU Inj. Line Leak Page Number: 28 of 29 Eddy County, NM

Standard (CCV-2)

QC Batch: 69648

Date Analyzed: 2010-05-03

Analyzed By: kg

	,		CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	252	101	80 - 120	2010-05-03

Standard (ICV-1)

QC Batch: 69667

Date Analyzed: 2010-05-04

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	\mathbf{Date}
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	97.7	98	85 - 115	2010-05-04

Standard (CCV-1)

QC Batch: 69667

Date Analyzed: 2010-05-04

Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride	11005	mg/Kg	100	102	102	85 - 115	2010-05-04

Standard (ICV-1)

QC Batch: 69668

Date Analyzed: 2010-05-04

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc .	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.4	99	85 - 115	2010-05-04

Standard (CCV-1)

QC Batch: 69668

Date Analyzed: 2010-05-04

Analyzed By: AR

			$\rm CCVs$	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-05-04

Report Date: May 5, 2010 Work Order: 10042912 Page Number: 29 of 29 114-6400502 COG/RJU Inj. Line Leak Eddy County, NM Standard (ICV-1) QC Batch: 69669 Date Analyzed: 2010-05-04 Analyzed By: AR **ICVs ICVs ICVs** Percent True Found Percent Recovery Date Analyzed Param Flag Units Conc. Conc. Recovery Limits Chloride 100 99.6 85 - 115 2010-05-04 mg/Kg 100 Standard (CCV-1) Date Analyzed: 2010-05-04 QC Batch: 69669 Analyzed By: AR CCVs**CCVs CCVs** Percent True Found Percent Recovery Date Param Flag Units Conc. Conc. Recovery Limits Analyzed 100 100 85 - 115 2010-05-04 Chloride mg/Kg 100 Standard (ICV-1) Date Analyzed: 2010-05-04 QC Batch: 69670 Analyzed By: AR **ICVs** ICVs**ICVs** Percent True Found Date Percent Recovery Param Flag Units Conc. Conc. Recovery Limits Analyzed 100 100 100 85 - 115 2010-05-04 Chloride mg/Kg Standard (CCV-1) QC Batch: 69670 Date Analyzed: 2010-05-04 Analyzed By: AR CCVsCCVsCCVsPercent Found Percent Date True Recovery

Conc.

99.6

Recovery

100

Conc.

100

Limits

85 - 115

Analyzed

2010-05-04

Flag

Param

Chloride

Units

mg/Kg

Order #: 10042912

An	Analysis Request of Chain of Custody Record										k	PAGE: S OF: 3 ANALYSIS REQUEST																
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Order #:10042912

Analysis Request of Chain of	20	rc	1	丁								PA	GE:		2		OF	:	3				
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TETRA TECI 1910 N. Big Spring St Midland, Texas 79705 (432) 682-4559 • Fax (432) 6	i. 5	•							15 (Ext. to C35)	r Pb Hg	r Pd Hg										10S		
CLIENT NAME: CG SITE MANAGER: TKe Tavare 2	v e	2	F		SERV	/ATIV	E		X	BB C	Ba C			0/624	70/625						P. H.		
PROJECT NO.: 114-640650'Z PROJECT NAME: 104-640650'Z PROJECT NAME: COG / IZJU Inj. Line Leak Eddy Co., NM	OFCONTAINERS	OF CONTAIN O (Y/N)						71B.7	MOD S	RCRA Metals Ag As Ba Cd C	etals Ag As	TCLP Volatiles	mi Volatiles	GC,MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	809/08	, veos	Spec.	ta (Air)	PLM (Asbestos)	ions/Cation		
LAB I.D. NUMBER 7010 TIME TIME WAY BY SAMPLE IDENTIFIC		FILTERED (Y/N)	Ŧ	HNO3	ICE	NONE		alex 80	PAH 827	RCRA M	TCLP Metals Ag	TCLP Vo	RC P Se	GC.MS V	GC.MS S	PCB's 80	Pest. 808/608	Gamma Spec.	Alpha Be	PLM (As	Major Ar		
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PROJECT NO 114-64		<u>.</u>	PR	ROJ		NAME: OG RJU Inj. C	Tavarez ine Lruk		NUMBER OF CONTAINERS	D (Y/N)	T	IV)E (8015 MOD. 7X1005	0	etals Ag As etals Ag As	atiles	TCLP Semi Volatiles	RCI GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	80/608	Nano	Spec.	ota (Air)	PLM (Asbestos) Major Anjons/Cations, pH, TDS			
LAB I.D. NUMBER	DATE 2010	TIME	MATRIX	COMP	GRAB	SAMPL	E IDENTIFIC	ATION	NUMBER	FILTERED (Y/N)	2 2	<u>S</u>	NONE		TPH 8015 M	PAH 827	TCLP M	TCLP Volatiles	TCLP Se	GC.MS V	GC.MS S	PCB's 80	Chloride	Gamma Spec.	Alpha Be	PLM (Asbestos) Major Anions/C			
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Summary Report

Ike Tavarez Tetra Tech

1910 N. Big Spring Street

Midland, TX 79705

Report Date: August 20, 2010

Work Order: 10081643

Project Location: Eddy County, NM

COG/RJU Inj. Line Leak Project Name:

Project Number: 114-6400502

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
241231	SB-1 1'	soil	2010-08-12	00:00	2010-08-13
241232	SB-1 3'	soil	2010-08-12	00:00	2010-08-13
241233	SB-1 5'	soil	2010-08-12	00:00	2010-08-13
241234	SB-1 7'	soil	2010-08-12	00:00	2010-08-13
241235	SB-1 10'	soil	2010-08-12	00:00	2010-08-13
241236	SB-1 15'	soil	2010-08-12	00:00	2010-08-13
241237	SB-1 20'	soil '	2010-08-12	00:00	2010-08-13
241238	SB-1 25'	soil	2010-08-12	00:00	2010-08-13
241239	SB-1 30'	soil	2010-08-12	00:00	2010-08-13
241240	SB-2 1'	soil	2010-08-12	00:00	2010-08-13
241241	SB-2 3'	soil	2010-08-12	00:00	2010-08-13
241242	SB-2 5'	soil	2010-08-12	00:00	2010-08-13
241243	SB-2 7'	soil	2010-08-12	00:00	2010-08-13
241244	SB-2 10'	soil	2010-08-12	00:00	2010-08-13
241245	SB-2 15'	soil	2010-08-12	00:00	2010-08-13
241246	SB-2 20'	soil	2010-08-12	00:00	2010-08-13
241247	SB-2 25'	soil	2010-08-12	00:00	2010-08-13
241248	SB-2 30'	soil	2010-08-12	00:00	2010-08-13
241249	SB-3 1'	soil	2010-08-12	00:00	2010-08-13
241250	SB-3 3'	soil	2010-08-12	00:00	2010-08-13
241251	SB-3 5'	soil	2010-08-12	00:00	2010-08-13
241252	SB-3 7'	soil	2010-08-12	00:00	2010-08-13
241253	SB-3 10'	soil	2010-08-12	00:00	2010-08-13
241254	SB-3 15'	soil	2010-08-12	00:00	2010-08-13
241255	SB-3 20'	soil	2010-08-12	00:00	2010-08-13
241256	SB-3 25'	soil	2010-08-12	00:00	2010-08-13
241257	SB-3 30'	soil	2010-08-12	00:00	2010-08-13

Report Date: August 20, 2010 Work Order: 10081643

			BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	DRO	GRO	
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
241231 - SB-1 1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00
241240 - SB-2 1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	110	< 2.00
241249 - SB-3 1'	< 0.0200	< 0.0200	< 0.0200	< 0.0200	< 50.0	< 2.00

Sample: 241231 - SB-1 1'

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

Sample: 241232 - SB-1 3'

Param	Flag	Result	Units	RL
Chloride		335	mg/Kg	4.00

Sample: 241233 - SB-1 5'

Param	Flag	Result	Units	RL
Chloride		4460	mg/Kg	4.00

Sample: 241234 - SB-1 7'

Param	Flag	Result	Units	RL
Chloride		11200	mg/Kg	4.00

Sample: 241235 - SB-1 10'

Param	Flag	Result	Units	RL
Chloride		10700	mg/Kg	4.00

Sample: 241236 - SB-1 15'

Param	Flag	Result	Units	RL
Chloride		1810	mg/Kg	4.00

Sample: 241237 - SB-1 20'

 $continued \dots$

Page Number: 2 of 5

Report Date: Augu	ust 20, 2010	Work Order: 10081643	Page	Page Number: 3 of 5	
sample 241237 con	tinued				
Param	Flag	Result	Units	RL	
Param	Flag	Result	Units	RL	
Chloride		408	mg/Kg	4.00	
Sample: 241238	- SB-1 25'				
Param	Flag	Result	Units	RL	
Chloride		240	mg/Kg	4.00	
Sample: 241239	- SB-1 30'				
Param	Flag	Result	Units	RL	
Chloride		392	mg/Kg	4.00	
Sample: 241240 Param Chloride	- SB-2 1'	Result 586	Units mg/Kg	RL 4.00	
Sample: 241241	- SR-2 3'				
	- 010-4 9				
_		Result	Units	RI.	
Param	Flag	Result 2490	Units mg/Kg	RL 4.00	
Param Chloride	Flag				
Param Chloride Sample: 241242	Flag - SB-2 5'	2490	mg/Kg	4.00	
Param Chloride	Flag				
Param Chloride Sample: 241242 Param	Flag - SB-2 5' Flag	2490 Result	mg/Kg Units	4.00 RL	
Param Chloride Sample: 241242 Param Chloride	Flag - SB-2 5' Flag	2490 Result	mg/Kg Units	4.00 RL	

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This is only a summary. Please, refer to the complete report package for quality control data.

Sample: 241244 - SB-2 10'

Report Date: August 20, 2010		Work Order: 10081643	Page	Page Number: 4 of 5	
Param	Flag	Result	Units	m RL	
Chloride		1380	mg/Kg	4.00	
Sample: 241245	- SB-2 15'				
Param	Flag	Result	Units	RL	
Chloride		1090	mg/Kg	4.00	
Sample: 241246	- SB-2 20'				
Param	Flag	Result	Units	RL	
Chloride		586	mg/Kg	4.00	
Sample: 241247	- SB-2 25'				
Param	Flag	Result	Units	RL	
Chloride		412	mg/Kg	4.00	
Sample: 241248	- SB-2 30'				
Param	Flag	Result	Units	RL	
Chloride		275	mg/Kg	4.00	
Sample: 241249	- SB-3 1'				
Param	Flag	Result	Units	RL	
Chloride		1470	mg/Kg	4.00	
Sample: 241250	- SB-3 3'				
Param	Flag	Result	Units	RL	
Chloride		2330	mg/Kg	4.00	
Sample: 241251	- SB-3 5'				
Param	Flag	Result	Units	RL	
Chloride	- ***0	2930	mg/Kg	4.00	

Report Date: August 20, 2010		Work Order: 10081643	Page	Page Number: 5 of 5	
Sample: 241252 -	SB-3 7'				
Param	Flag	Result	Units	RL	
Chloride		9710	mg/Kg	4.00	
Sample: 241253 -	· SB-3 10'				
Param	Flag	Result	${ m Units}$	RL	
Chloride		3170	mg/Kg	4.00	
Sample: 241254 -	· SB-3 15'				
Param	Flag	Result	Units	RL	
Chloride		1250	mg/Kg	4.00	
Sample: 241255 -	· SB-3 20'				
Param	Flag	Result	Units	RL	
Chloride		903	mg/Kg	4.00	
Sample: 241256 -	SB-3 25'				
Param	Flag	Result	Units	RL	
Chloride		228	mg/Kg	4.00	
Sample: 241257 -	SB-3 30'				
Param	Flag	Result	Units	RL	
Chloride		<200	mg/Kg	4.00	



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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

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

Report Date: August 20, 2010

Work Order: 10081643

Project Location: Eddy County, NM

Project Name:

COG/RJU Inj. Line Leak

Project Number:

114-6400502

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
241231	SB-1 1'	soil	2010-08-12	00:00	2010-08-13
241232	SB-1 3'	soil	2010-08-12	00:00	2010-08-13
241233	SB-1 5'	soil	2010-08-12	00:00	2010-08-13
241234	SB-1 7'	soil	2010-08-12	00:00	2010-08-13
241235	SB-1 10'	soil	2010-08-12	00:00	2010-08-13
241236	SB-1 15'	soil	2010-08-12	00:00	2010-08-13
241237	SB-1 20'	soil	2010-08-12	00:00	2010-08-13
241238	SB-1 25'	soil	2010-08-12	00:00	2010-08-13
241239	SB-1 30'	soil	2010-08-12	00:00	2010-08-13
241240	SB-2 1'	soil	2010-08-12	00:00	2010-08-13

			Date	\mathbf{Time}	Date
Sample	Description	Matrix	Taken	Taken	Received
241241	SB-2 3'	soil	2010-08-12	00:00	2010-08-13
241242	SB-2 5'	soil	2010-08-12	00:00	2010-08-13
241243	SB-2 7'	soil	2010-08-12	00:00	2010-08-13
241244	SB-2 10'	soil	2010-08-12	00:00	2010-08-13
241245	SB-2 15'	soil	2010-08-12	00:00	2010-08-13
241246	SB-2 20'	soil	2010-08-12	00:00	2010-08-13
241247	SB-2 25'	soil	2010-08-12	00:00	2010-08-13
241248	SB-2 30'	soil	2010-08-12	00:00	2010-08-13
241249	SB-3 1'	soil	2010-08-12	00:00	2010-08-13
241250	SB-3 3'	soil	2010-08-12	00:00	2010-08-13
241251	SB-3 5'	soil	2010-08-12	00:00	2010-08-13
241252	SB-3 7'	soil	2010-08-12	00:00	2010-08-13
241253	SB-3 10'	soil	2010-08-12	00:00	2010-08-13
241254	SB-3 15'	soil	2010-08-12	00:00	2010-08-13
241255	SB-3 20'	soil	2010-08-12	00:00	2010-08-13
241256	SB-3 25'	soil	2010-08-12	00:00	2010-08-13
241257	SB-3 30'	soil	2010-08-12	00:00	2010-08-13

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

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

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

Standard Flags

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

Case Narrative

Samples for project COG/RJU Inj. Line Leak were received by TraceAnalysis, Inc. on 2010-08-13 and assigned to work order 10081643. Samples for work order 10081643 were received intact at a temperature of 18.0 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	62330	2010-08-18 at 09:15	72769	2010-08-18 at 11:58
Chloride (Titration)	SM 4500-Cl B	62312	2010-08-17 at 11:03	72698	2010-08-17 at 16:18
Chloride (Titration)	SM 4500-Cl B	62313	2010-08-17 at 11:04	72699	2010-08-17 at 16:19
Chloride (Titration)	SM 4500-Cl B	62314	2010-08-17 at 12:05	72700	2010-08-17 at 16:20
TPH DRO - NEW	S 8015 D	62397	2010-08-19 at 10:46	72774	2010-08-19 at 10:46
TPH GRO	S 8015 D	62330	2010-08-18 at 09:15	72770	2010-08-18 at 12:25

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 10081643 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.

Samples received on ice.

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.

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 4 of 24 Eddy County, NM

Analytical Report

Sample: 241231 - SB-1 1'

Laboratory:

Prep Batch: 62330

Midland

Analysis: QC Batch: BTEX 72769

Analytical Method:

S 8021B

Date Analyzed: 2010-08-18 Sample Preparation: 2010-08-18 Prep Method: S 5035 AG

Analyzed By:

Prepared By:

 \mathbf{AG}

RL

		1,011			
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

					\mathbf{Spike}	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	1	0.996	mg/Kg	1	2.00	50	52.8 - 137
4-Bromofluorobenzene (4-BFB)		0.900	mg/Kg	1	2.00	45	38.4 - 157

Sample: 241231 - SB-1 1'

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

72698

Prep Batch: 62312

Analytical Method: SM 4500-Cl B

Date Analyzed:

2010-08-17 Sample Preparation: 2010-08-17

Prep Method: N/AAnalyzed By: AR

Prepared By: AR

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

Sample: 241231 - SB-1 1'

Laboratory:

Midland

Analysis: QC Batch:

Prep Batch: 62397

TPH DRO - NEW

72774

Analytical Method: Date Analyzed:

S 8015 D 2010-08-19 Sample Preparation: 2010-08-19 Prep Method: Analyzed By:

N/A kg Prepared By:

RL

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

¹SPECIAL-TFT is out of control limits due to an unknown anomaly. However, 4-BFB is within control limits and shows the method to be in control. •

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 5 of 24 Eddy County, NM

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		111	mg/Kg	1	100	111	70 - 130

Sample: 241231 - SB-1 1'

Laboratory: Midland

Analysis: TPH GRO QC Batch: 72770 Prep Batch: 62330

Analytical Method:

S 8015 D 2010-08-18 Date Analyzed: Sample Preparation: 2010-08-18 Prep Method: S 5035 Analyzed By: AG

AG

Prepared By:

RLParameter Flag Result Units Dilution RL \overline{GRO} < 2.00 mg/Kg 1 2.00

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.10	mg/Kg	1	2.00	55	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.01	mg/Kg	1	2.00	50	42 - 159

Sample: 241232 - SB-1 3'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 72698 Prep Batch: 62312

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2010-08-17 2010-08-17

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

RLDilution Parameter Flag Result Units RL50 4.00 Chloride 335 mg/Kg

Sample: 241233 - SB-1 5'

Laboratory: Midland

Analysis: Chloride (Titration) QC Batch: 72698 Prep Batch: 62312

Analytical Method: Date Analyzed: Sample Preparation:

SM 4500-Cl B 2010-08-17 2010-08-17

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

RLFlag Parameter Result Units Dilution RLChloride 4460 100 4.00 mg/Kg

Report Date: August 20, 2010 Work Order: 10081643 Page Number: 6 of 24 114-6400502 COG/RJU Inj. Line Leak Eddy County, NM Sample: 241234 - SB-1 7' Midland Laboratory: Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 72698 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62312 Sample Preparation: 2010-08-17 Prepared By: ARRLRLParameter Result Units Dilution Flag 11200 100 4.00 Chloride mg/Kg Sample: 241235 - SB-1 10' Midland Laboratory: Prep Method: N/A Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B QC Batch: 72698 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62312 Sample Preparation: 2010-08-17 Prepared By: ARRLParameter Result Units Dilution RLFlag mg/Kg 4.0010700 Chloride 100 Sample: 241236 - SB-1 15' Laboratory: Midland Prep Method: N/A Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B QC Batch: 72698 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62312 Sample Preparation: 2010-08-17 Prepared By: AR RLParameter Result Units Dilution RLFlag 1810 mg/Kg 100 4.00 Chloride Sample: 241237 - SB-1 20' Laboratory: Midland Chloride (Titration) SM 4500-Cl B Prep Method: N/A Analysis: Analytical Method: QC Batch: 72698 Date Analyzed: 2010-08-17 Analyzed By: AR Prepared By: Sample Preparation: 2010-08-17 AR

RL

408

Result

Units

mg/Kg

RL

4.00

Dilution

50

Prep Batch:

Parameter

Chloride

62312

Flag

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 7 of 24 Eddy County, NM

Sample: 241238 - SB-1 25'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72698 62312 Prep Batch:

Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2010-08-17

2010-08-17

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

RL

Units Dilution RLParameter Flag Result Chloride 240 mg/Kg 50 4.00

Sample: 241239 - SB-1 30'

Laboratory:

Midland

Analysis: QC Batch: 72698

Chloride (Titration)

Prep Batch: 62312 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2010-08-17 2010-08-17

Prep Method: Analyzed By: Prepared By:

N/A

AR

AR

RL

Dilution Parameter Flag Result Units RL392 mg/Kg $\overline{50}$ 4.00 Chloride

Sample: 241240 - SB-2 1'

Laboratory:

Midland

Analysis: BTEX QC Batch: 72769 Prep Batch: 62330

Analytical Method: Date Analyzed:

S 8021B 2010-08-18 Sample Preparation: 2010-08-18

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

RL

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.17	mg/Kg	1	2.00	58	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.10	mg/Kg	11	2.00	55	38.4 - 157

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 8 of 24 Eddy County, NM

Sample: 241240 - SB-2 1'

Laboratory:

Midland

Analysis: QC Batch: Chloride (Titration)

Flag

72699 Prep Batch: 62313 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2010-08-17

2010-08-17

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

RL

Parameter Chloride

Result 586

Units mg/Kg Dilution 50

RL4.00

Sample: 241240 - SB-2 1'

Laboratory:

Midland

Analysis: QC Batch:

72774 Prep Batch: 62397

TPH DRO - NEW

Analytical Method: Date Analyzed:

Sample Preparation:

S 8015 D 2010-08-19 2010-08-19

Spike

Amount

100

Prep Method: Analyzed By:

kg Prepared By: kg

RLResult

Units

Dilution

RL50.0

N/A

DRO

Parameter

110

mg/Kg

132

Recovery

Surrogate

Flag Result Units n-Tricosane 132 mg/Kg

Flag

Dilution $\overline{1}$

Percent Recovery

Limits

70 - 130

Sample: 241240 - SB-2 1'

Laboratory:

Midland

Analysis: QC Batch:

Prep Batch:

TPH GRO

72770 62330

Analytical Method: Date Analyzed:

S 8015 D

2010-08-18 Sample Preparation: 2010-08-18

Prep Method: S 5035 Analyzed By:

AG Prepared By: AG

RL

Parameter Flag

4-Bromofluorobenzene (4-BFB)

Result < 2.00

1.21

Units

Dilution

Percent

Recovery

66

60

RL

GRO

Same of

Surrogate

Flag Trifluorotoluene (TFT)

Result Units 1.32 mg/Kg

mg/Kg

mg/Kg

Dilution

1

1

Spike

Amount

2.00

2.00

2.00 Recovery

Limits

48.5 - 152

42 - 159

²High surrogate recovery due to peak interference.

Report Date: August 20, 2010 Work Order: 10081643 Page Number: 9 of 24 114-6400502 COG/RJU Inj. Line Leak Eddy County, NM Sample: 241241 - SB-2 3' Laboratory: Midland Analysis: Chloride (Titration) Prep Method: N/A Analytical Method: SM 4500-Cl B QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: ARRLParameter Result Units Dilution RLFlag 100 Chloride 2490 mg/Kg 4.00 Sample: 241242 - SB-2 5' Laboratory: Midland Analysis: Chloride (Titration) SM 4500-Cl B Prep Method: N/A Analytical Method: QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: ARRLParameter Units Dilution RLFlag Result Chloride 586 mg/Kg 50 4.00 Sample: 241243 - SB-2 7' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: ARPrep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: ARRLParameter Flag Result Units Dilution RLChloride 6810 mg/Kg 100 4.00Sample: 241244 - SB-2 10' Laboratory: Midland Analysis: Chloride (Titration) SM 4500-Cl B Prep Method: N/A Analytical Method: QC Batch: Analyzed By:

Date Analyzed:

RL

Result

1380

Sample Preparation:

2010-08-17

2010-08-17

Units

mg/Kg

AR

AR

RL

4.00

Prepared By:

Dilution

100

72699

62313

Flag

Prep Batch:

Parameter

Chloride

Report Date: August 20, 2010 Work Order: 10081643 Page Number: 10 of 24 114-6400502 COG/RJU Inj. Line Leak Eddy County, NM Sample: 241245 - SB-2 15' Laboratory: Midland Analysis: Chloride (Titration) Analytical Method: Prep Method: N/A SM 4500-Cl B QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: AR Prep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: ARRLParameter Result Units Dilution RLFlag Chloride 1090 mg/Kg 100 4.00 Sample: 241246 - SB-2 20' Laboratory: Midland Analysis: Chloride (Titration) SM 4500-Cl B Prep Method: N/A Analytical Method: QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: AR Prep Batch: 62313 Prepared By: ARSample Preparation: 2010-08-17 RLParameter Dilution RLFlag Result Units 586 50 4.00Chloride mg/Kg Sample: 241247 - SB-2 25' Midland Laboratory: Analysis: Chloride (Titration) Analytical Method: SM 4500-Cl B Prep Method: N/A QC Batch: 72699 Date Analyzed: 2010-08-17 Analyzed By: AR Prep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: ARRLFlag Parameter Result Units Dilution RL4.00Chloride 412 mg/Kg 50 Sample: 241248 - SB-2 30' Midland Laboratory: Analysis: Chloride (Titration) SM 4500-Cl B Prep Method: N/A Analytical Method: QC Batch: 72699 Analyzed By: ARDate Analyzed: 2010-08-17 Prep Batch: 62313 Sample Preparation: 2010-08-17 Prepared By: AR

RL

275

Units

mg/Kg

Dilution

50

RL

4.00

Result

Flag

Parameter

Chloride

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 11 of 24 Eddy County, NM

Sample: 241249 - SB-3 1'

Laboratory: Midland

Analysis: BTEX QC Batch: 72769 Prep Batch: 62330

Analytical Method: Date Analyzed:

S 8021B2010-08-18 Sample Preparation: 2010-08-18

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

RL

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

					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.94	mg/Kg	1	2.00	97	52.8 - 137
4-Bromofluorobenzene (4-BFB)		1.64	mg/Kg	1	2.00	82	38.4 - 157

Sample: 241249 - SB-3 1'

Laboratory: Midland

Analysis: Chloride (Titration)

QC Batch: 72699 Prep Batch: 62313 Analytical Method: Date Analyzed:

Sample Preparation:

SM 4500-Cl B 2010-08-17 2010-08-17

Prep Method: N/A Analyzed By: AR

AR

Prepared By:

		RL			
Parameter	Flag	Result	\mathbf{Units}	Dilution	RL
Chloride		1470	mg/Kg	100	4.00

Sample: 241249 - SB-3 1'

Laboratory: Midland

TPH DRO - NEW Analysis:

QC Batch: 72774 Prep Batch: 62397 Analytical Method: Date Analyzed:

S 8015 D 2010-08-19 Sample Preparation: 2010-08-19 Prep Method: N/A Analyzed By: kg Prepared By: kg

RLParameter Flag Result Units Dilution RL50.0 DRO < 50.0 mg/Kg 1

					Spike	Percent	Recovery
Surrogate	\mathbf{Flag}	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		115	mg/Kg	1	100	115	70 - 130

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 12 of 24 Eddy County, NM

Sample: 241249 - SB-3 1'

Laboratory:

Midland

Analysis: QC Batch: TPH GRO

72770 Prep Batch: 62330 Analytical Method:

S 8015 D

Date Analyzed: Sample Preparation:

2010-08-18 2010-08-18 Prep Method: S 5035 Analyzed By:

 \mathbf{AG} Prepared By: AG

RL

Parameter	Flag	Result	Units	Dilu
GRO		< 2.00	mg/Kg	

RLution 2.00 1

Surrogate	Flag	Result	Units	Dilution	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Percent Recovery	$egin{array}{c} ext{Recovery} \ ext{Limits} \end{array}$
Trifluorotoluene (TFT)		2.26	mg/Kg	1	2.00	113	48.5 - 152
4-Bromofluorobenzene (4-BFB)		1.80	mg/Kg	1	2.00	90	42 - 159

Sample: 241250 - SB-3 3'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-08-17

Prep Method: N/A ARAnalyzed By:

QC Batch: 72700 Prep Batch:

62314

Sample Preparation: 2010-08-17

Prepared By: AR

RL

Parameter	Flag	Result	Units	Dilution	RL
Chloride		2330	mg/Kg	100	4.00

Sample: 241251 - SB-3 5'

Laboratory:

Midland

Analysis: QC Batch:

Chloride (Titration) 72700

Analytical Method: Date Analyzed:

SM 4500-Cl B 2010-08-17

Prep Method: N/A Analyzed By: AR

Prep Batch:

62314

Sample Preparation:

2010-08-17

Prepared By: AR

Flag

Parameter Chloride

Result 2930

RL

Units

mg/Kg

Dilution

100

RL4.00

N/A

Sample: 241252 - SB-3 7'

Laboratory:

Midland

62314

Analysis: QC Batch: 72700 Prep Batch:

Chloride (Titration)

Analytical Method: Date Analyzed: Sample Preparation: 2010-08-17

SM 4500-Cl B 2010-08-17

Prep Method: Analyzed By:

ARPrepared By: AR

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 13 of 24

Eddy County, NM

		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		9710	mg/Kg	100	4.00

Sample: 241253 - SB-3 10'

Laboratory: Midland

Analysis:

Chloride (Titration)

72700

Analytical Method:

SM 4500-Cl B 2010-08-17

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch: 62314

Date Analyzed: Sample Preparation:

2010-08-17

Prepared By: AR

Flag Parameter Result Chloride 3170

Units mg/Kg RL

Sample: 241254 - SB-3 15'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method: N/A ARAnalyzed By:

QC Batch: Prep Batch: 62314

72700

Date Analyzed: Sample Preparation:

2010-08-17 2010-08-17

Prepared By: AR

RL

RL

Result 1250

Units mg/Kg Dilution 100

Dilution

100

RL

4.00

4.00

Parameter Flag Chloride

Sample: 241255 - SB-3 20'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A

QC Batch: Prep Batch: 62314

72700

Sample Preparation:

2010-08-17 2010-08-17

Analyzed By: ARPrepared By: AR

RL

Parameter Chloride

Flag

Result 903

Units mg/Kg Dilution $\overline{100}$ RL

4.00

Sample: 241256 - SB-3 25'

Laboratory:

Midland

Analysis:

Chloride (Titration)

Analytical Method:

SM 4500-Cl B

Prep Method:

QC Batch:

72700

Date Analyzed:

2010-08-17

N/AAnalyzed By: AR AR

Prep Batch:

62314

Sample Preparation:

2010-08-17

Prepared By:

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 14 of 24

Eddy County, NM

		m RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		228	mg/Kg	50	4.00

Sample: 241257 - SB-3 30'

Laboratory: Midland

Analysis:

72700

Chloride (Titration)

Analytical Method: Date Analyzed:

SM 4500-Cl B

Prep Method: N/A Analyzed By: AR

QC Batch: Prep Batch: 62314

Sample Preparation: 2010-08-17

2010-08-17

Prepared By: AR

RT

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

Method Blank (1)

QC Batch: 72698

QC Batch: Prep Batch: 62312

72698

Date Analyzed:

2010-08-17

Analyzed By: AR. Prepared By: AR

QC Preparation: 2010-08-17

MDI

		מעוואו	ř	
Parameter	Flag	Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1)

Prep Batch: 62313

QC Batch: 72699

QC Batch:

72699

Date Analyzed:

2010-08-17 QC Preparation: 2010-08-17 Analyzed By: AR

Prepared By: AR

MDL

Parameter	Flag	Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1)

QC Batch: 72700

QC Batch: Prep Batch: 62314

72700

Date Analyzed:

2010-08-17

Analyzed By: AR Prepared By: AR

QC Preparation: 2010-08-17

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 15 of 24

Eddy County, NM

		MDL		
Parameter	Flag	Result	Units	RL
Chloride		<2.18	mg/Kg	4

Method Blank (1)

QC Batch: 72769

QC Batch:

72769

Date Analyzed:

2010-08-18

Analyzed By: AG

Prep Batch: 62330 QC Preparation: 2010-08-18

Prepared By: AG

		MDL		
Parameter	Flag	Result	Units	RL
Benzene		< 0.0150	mg/Kg	0.02
Toluene		< 0.00950	${ m mg/Kg}$	0.02
Ethylbenzene		< 0.0106	mg/Kg	0.02
Xylene		<0.00930	mg/Kg	0.02

					Spike	Percent	Recovery
Surrogate	Flag	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		1.78	mg/Kg	1	2.00	89	66.6 - 122
4-Bromofluorobenzene (4-BFB)		1.48	mg/Kg	11	2.00	74	55.4 - 132

Method Blank (1)

QC Batch: 72770

QC Batch:

72770

Date Analyzed:

2010-08-18

Analyzed By: AG

Prep Batch: 62330

QC Preparation: 2010-08-18

Prepared By: AG

RL

MDL Result Units Parameter Flag mg/Kg < 1.65 GRO

Curromata	Flor	Result	Units	Dilution	$egin{array}{c} \mathbf{Spike} \ \mathbf{Amount} \end{array}$	Percent Recovery	Recovery Limits
Surrogate	Flag	nesuit	Units	Dittibili	Amount	necovery	Limits
Trifluorotoluene (TFT)		1.99	mg/Kg	1	2.00	100	67.6 - 150
4-Bromofluorobenzene (4-BFB)		1.60	mg/Kg	1	2.00	80	52.4 - 130

Method Blank (1)

QC Batch: 72774

QC Batch: Prep Batch: 62397

72774

Date Analyzed:

2010-08-19

QC Preparation: 2010-08-19

Analyzed By: kg

Prepared By: kg

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 16 of 24 Eddy County, NM

		MDL		
Parameter	Flag	Result	Units	RL
DRO		<14.5	mg/Kg	50

					Spike	Percent	Recovery
Surrogate	Flag	Result	\mathbf{Units}	Dilution	Amount	Recovery	Limits
n-Tricosane		91.6	mg/Kg	1	100	92	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:

72698

Date Analyzed:

2010-08-17

Analyzed By: AR

Prep Batch: 62312

QC Preparation: 2010-08-17 Prepared By: AR

	LCS			$_{ m Spike}$	Matrix		Rec .
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	97.6	mg/Kg	1	100	< 2.18	98	85 - 115

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

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

72699

Date Analyzed:

2010-08-17

Analyzed By: AR

Prep Batch: 62313

QC Preparation: 2010-08-17

Prepared By: AR

	LCS			Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	97.3	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			$_{ m Spike}$	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	102	mg/Kg	1	100	< 2.18	102	85 - 115	5	20

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

Laboratory Control Spike (LCS-1)

QC Batch:

72700

Date Analyzed:

2010-08-17

Analyzed By: AR

Prep Batch: 62314

QC Preparation: 2010-08-17

Prepared By: AR

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 17 of 24 Eddy County, NM

	LCS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	96.7	mg/Kg	1	100	< 2.18	97	85 - 115

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

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

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

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 62330

72769

Date Analyzed:

2010-08-18

Analyzed By: AG

QC Preparation: 2010-08-18

Prepared By:

Param	LCS Result	Units	Dil.	$\begin{array}{c} {\rm Spike} \\ {\rm Amount} \end{array}$	Matrix Result	Rec.	Rec. Limit
Benzene	1.96	mg/Kg	1	2.00	< 0.0150	98	81.9 - 108
Toluene	1.89	mg/Kg	1	2.00	< 0.00950	94	81.9 - 107
Ethylbenzene	1.76	mg/Kg	1	2.00	< 0.0106	88	78.4 - 107
Xylene	5.34	mg/Kg	1	6.00	< 0.00930	89	79.1 - 107

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene	1.97	mg/Kg	1	2.00	< 0.0150	98	81.9 - 108	0	20
Toluene	1.91	mg/Kg	1	2.00	< 0.00950	96	81.9 - 107	1	20
Ethylbenzene	1.77	mg/Kg	1	2.00	< 0.0106	88	78.4 - 107	1	20
Xylene	5.38	mg/Kg	1	6.00	< 0.00930	90	79.1 - 107	1	20

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

	LCS	LCSD			\mathbf{Spike}	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.76	1.73	mg/Kg	1	2.00	88	86	70.2 - 114
4-Bromofluorobenzene (4-BFB)	1.65	1.64	mg/Kg	1	2.00	82	82	69.8 - 121

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch: 62330

72770

Date Analyzed:

2010-08-18 QC Preparation: 2010-08-18 Analyzed By: AG

Prepared By: AG

	LCS			\mathbf{Spike}	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	${f Limit}$
GRO	15.2	mg/Kg	1	20.0	< 1.65	76	69.9 - 95.4

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 18 of 24

114-6400502

Eddy County, NM

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
GRO	14.4	mg/Kg	1	20.0	< 1.65	72	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			$_{ m Spike}$	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.00	1.64	mg/Kg	1	2.00	100	82	61.9 - 142
4-Bromofluorobenzene (4-BFB)	1.78	1.59	mg/Kg	1	2.00	89	80	68.2 - 132

Laboratory Control Spike (LCS-1)

QC Batch:

72774

Date Analyzed:

2010-08-19

Analyzed By: kg

Prep Batch: 62397

QC Preparation:

2010-08-19

Prepared By:

	LCS			\mathbf{Spike}	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO	204	mg/Kg	1	250	<14.5	82	57.4 - 133.4

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

	LCSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	215	mg/Kg	1	250	<14.5	86	57.4 - 133.4	5	20

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

	LCS	LCSD			Spike	LCS	LCSD	${ m Rec.}$
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	116	103	mg/Kg	1	100	116	103	70 - 130

Matrix Spike (MS-1)

Spiked Sample: 241239

QC Batch:

72698

Date Analyzed:

2010-08-17

Analyzed By: AR Prepared By: AR

Prep Batch: 62312

QC Preparation: 2010-08-17

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
Chloride	10300	mg/Kg	100	10000	392	99	85 - 115

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

	MSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	10500	mg/Kg	100	10000	392	101	85 - 115	2	20

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 19 of 24 Eddy County, NM

Matrix Spike (MS-1)

Spiked Sample: 241249

QC Batch: Prep Batch: 62313

72699

Date Analyzed:

2010-08-17

QC Preparation:

2010-08-17

Analyzed By: AR

Prepared By: AR

MS Spike Matrix Rec. Result Units Dil. Amount Result Rec. Limit Param Chloride 11000 mg/Kg 100 10000 1470 95 85 - 115

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

MSD Spike RPD Matrix Result Units Dil. Amount Result Rec. Limit RPD Limit Param Chloride 11300 mg/Kg 100 10000 1470 98 85 - 115 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: 241263

QC Batch:

72700

Date Analyzed:

2010-08-17

Analyzed By: AR

Prep Batch: 62314 QC Preparation: 2010-08-17 Prepared By: AR

•	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	\mathbf{Limit}
Chloride	13900	mg/Kg	100	10000	3920	100	85 - 115

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

	MSD			Spike	Matrix		${ m Rec.}$		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	14600	mg/Kg	100	10000	3920	107	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: 241219

QC Batch:

72769

Date Analyzed:

2010-08-18

Analyzed By: AG

Prep Batch: 62330

QC Preparation:

2010-08-18

Prepared By: AG

	MS			Spike	Matrix		${ m Rec.}$
Param	Result	\mathbf{Units}	Dil .	Amount	Result	Rec.	Limit
Benzene	2.15	mg/Kg	1	2.00	< 0.0150	108	80.5 - 112
Toluene	2.13	mg/Kg	1	2.00	< 0.00950	106	82.4 - 113
Ethylbenzene	2.15	mg/Kg	1	2.00	< 0.0106	108	83.9 - 114
Xylene	6.47	mg/Kg	1	6.00	< 0.00930	108	84 - 114

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 20 of 24 Eddy County, NM

Param		$\begin{array}{c} \text{MSD} \\ \text{Result} \end{array}$	Units	Dil.	Spike Amount	Matrix Result	Rec.	${ m Rec.} \ { m Limit}$	RPD	RPD Limit
Benzene	3	1.52	mg/Kg	1	2.00	< 0.0150	76	80.5 - 112	34	20
Toluene	4	1.50	mg/Kg	1	2.00	< 0.00950	75	82.4 - 113	35	20
Ethylbenzene	5	1.51	mg/Kg	1	2.00	< 0.0106	76	83.9 - 114	35	20
Xylene	6	4.57	mg/Kg	1	6.00	< 0.00930	76	84 - 114	34	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	${ m Rec.}$	Rec.	Limit
Trifluorotoluene (TFT)	1.74	1.18	mg/Kg	1	2	87	59	41.3 - 117
4-Bromofluorobenzene (4-BFB)	1.67	1.14	mg/Kg	1	2	84	57	35.5 - 129

Matrix Spike (MS-1) Spiked Sample: 241299

QC Batch: 72770 Prep Batch: 62330 Date Analyzed: 2010-08-18 QC Preparation: 2010-08-18

Analyzed By: AG Prepared By: AG

	MS			Spike	Matrix		Rec.
Param	Result	\mathbf{Units}	Dil.	Amount	Result	Rec.	Limit
GRO	14.6	mg/Kg	1	20.0	< 1.65	73	61.8 - 114

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	Rec.	Limit	RPD	Limit
GRO	15.7	${ m mg/Kg}$	1	20.0	< 1.65	78	61.8 - 114	7	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.	\mathbf{Limit}
Trifluorotoluene (TFT)	1.12	1.23	mg/Kg	1	2	56	62	50 - 162
4-Bromofluorobenzene (4-BFB)	1.16	1.27	mg/Kg	1	2	58	64	50 - 162

Matrix Spike (MS-1) Spiked Sample: 241291

QC Batch: 72774 Prep Batch: 62397 Date Analyzed: 2010-08-19 QC Preparation: 2010-08-19 Analyzed By: kg Prepared By: kg

continued . . .

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

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

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

⁶Matrix spike recovery out of control limits due to peak interference. Use LCS/LCSD to demonstrate analysis is under control.

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 21 of 24 Eddy County, NM

matrix	snikes	continued			
TIOCHUI BLO	Opuloco	COTOUTEWCO	•	•	

	MS	•		Spike	Matrix		${ m Rec.}$
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit
•	MS			Spike	Matrix		Rec.
Param	Result	\mathbf{U} nits	Dil.	Amount	\mathbf{Result}	Rec.	Limit
DRO	220	mg/Kg	1	250	<14.5	88	35.2 - 167.1

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	228	mg/Kg	1	250	<14.5	91	35.2 - 167.1	4	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
n-Tricosane	107	106	mg/Kg	1	100	107	106	70 - 130

Standard (ICV-1)

QC Batch: 72698

Date Analyzed: 2010-08-17

Analyzed By: AR

			ICVs True	ICVs Found	$\begin{array}{c} \text{ICVs} \\ \text{Percent} \end{array}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2010-08-17

Standard (CCV-1)

QC Batch: 72698

Date Analyzed: 2010-08-17

Analyzed By: AR

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2010-08-17

Standard (ICV-1)

QC Batch: 72699

Date Analyzed: 2010-08-17

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-08-17

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 22 of 24 Eddy County, NM

Standard (CCV-1)

QC Batch: 72699

Date Analyzed: 2010-08-17

Analyzed By: AR

			CCVs True	${ m CCVs} \ { m Found}$	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.7	100	85 - 115	2010-08-17

Standard (ICV-1)

QC Batch: 72700

Date Analyzed: 2010-08-17

Analyzed By: AR

			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2010-08-17

Standard (CCV-1)

QC Batch: 72700

Date Analyzed: 2010-08-17

Analyzed By: AR

·			CCVs True	CCVs Found	${ m CCVs} \ { m Percent}$	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	99.7	100	85 - 115	2010-08-17

Standard (CCV-2)

QC Batch: 72769

Date Analyzed: 2010-08-18

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		mg/Kg	0.100	0.0980	98	80 - 120	2010-08-18
Toluene		mg/Kg	0.100	0.0947	95	80 - 120	2010-08-18
Ethylbenzene		mg/Kg	0.100	0.0888	89	80 - 120	2010-08-18
Xylene		mg/Kg	0.300	0.266	89	80 - 120	2010-08-18

Standard (CCV-3)

QC Batch: 72769

Date Analyzed: 2010-08-18

Analyzed By: AG

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 23 of 24 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	0.0988	99	80 - 120	2010-08-18
Toluene		mg/Kg	0.100	0.0941	94	80 - 120	2010-08-18
Ethylbenzene		mg/Kg	0.100	0.0868	87	80 - 120	2010-08-18
Xylene		mg/Kg	0.300	0.261	87	80 - 120	2010-08-18

Standard (CCV-2)

QC Batch: 72770

Date Analyzed: 2010-08-18

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.07	107	80 - 120	2010-08-18

Standard (CCV-3)

QC Batch: 72770

Date Analyzed: 2010-08-18

Analyzed By: AG

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	\mathbf{Flag}	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	0.875	88	80 - 120	2010-08-18

Standard (CCV-2)

QC Batch: 72774

Date Analyzed: 2010-08-19

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	233	93	80 - 120	2010-08-19

Standard (CCV-3)

QC Batch: 72774

Date Analyzed: 2010-08-19

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	233	93	80 - 120	2010-08-19

114-6400502

Work Order: 10081643 COG/RJU Inj. Line Leak Page Number: 24 of 24 Eddy County, NM

Standard (CCV-4)

QC Batch: 72774

 $Date\ Analyzed:\ \ 2010\text{-}08\text{-}19$

Analyzed By: kg

			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO		mg/Kg	250	228	91	80 - 120	2010-08-19

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Analysis Request of Chain of Custody Record															GE:		工		OF:		3	_							
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Please fill out all copies - Laboratory retains Yellow copy - Return Orginal copy to Tetra Tech - Project Manager retains Pink copy - Accounting receives Gold copy.

WO#: 1008/643 OF: **Analysis Request of Chain of Custody Record** PAGE: ANALYSIS REQUEST (Circle or Specify Method No.) **TETRA TECH** (Ext to C35) 1910 N. Big Spring St. 모 모 Midland, Texas 79705 2 2 (432) 682-4559 • Fax (432) 682-3946 TX1005 RCI
GC.MS Vol. 8240/8260/624
GC.MS Seml. Vol. 8270/625
PCB's 8080/608
Pest. 809/608
Chloridg SITE MANAGER: Hee Tavare & CLIENT NAME: PRESERVATIVE COG **METHOD** PROJECT NAME: COG/RTV Injectron Line PROJECT NO.: 114-6400502 FILTERED (Y/N) LAB I.D. MATRIX COMP. GRAB SAMPLE IDENTIFICATION DATE TIME NUMBER 9 2010 8/12 SB-2 ત્રવાત્રવા 842 SB-2 243 SB- 2 SB-2 10, 244 245 246 247 30' 248 249 SS SAMPLED BY: (Print & Initial) Time: Time: RELINGUISHED BY: (Signature) RECEIVED BY: (Signature) SAMPLE SHIPPED BY: (Circle) AIRBILL #: OTHER: CHAND DELIVERED RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) TETRA TECH CONTACT PERSON Results by: RECEIVING LABORATORY: RECEIVED BY: (Signature)

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

75000 righty Rum deeper samples

8-13.10

REMARKS:

ADDRESS Midland

18,000

SAMPLE CONDITION WHEN RECEIVED:

CONTACT:

Ike Tavarez

NO#:1008/643 **Analysis Request of Chain of Custody Record** OF: **ANALYSIS REQUEST** (Circle or Specify Method No.) **TETRATECH** (Ext. to C35) 1910 N. Big Spring St. Pb Hg Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946 CLIENT NAME: SITE MANAGER: PRESERVATIVE Ike Tawer **METHOD** PROJECT NO.: 14-6400502 PROJECT NAME: COG/RTU Injection Line FILTERED (Y/N) HCL Eddy Co., NM LAB I.D. COMP. SAMPLE IDÉNTIFICATION DATE TIME NUMBER 띯 2010 8/12 SB-3 *વ્યાવ*ડા **SB-3** 252 253 SB-3 254 200 256 SB-3 30' RELINQUISHED 67: (Signature) SAMPLED BY: (Print & Initial) Date: 8/3/13 1000 RELINQUISHED BY: (Signature) SAMPLE SHIPPED BY: (Circle) HAND DELIVERED RELINQUISHED BY: (Signature) RECEIVED BY: (Signature) TETRA TECH CONTACT PERSON: Results by: RECEIVING LABORATORY: RECEIVED BY: (Signature) The Toward **RUSH Charges** TIME: 15:45 ZIP: B. 13.10 CONTACT:

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

TPH > 5000 mg/kg Run deeper Semples

SAMPLE CONDITION WHEN RECEIVED

18.50