SITE INFORMATION

Report Type: Closure Report

	an 1. C. M. C. M. M. M. Manter, S.H. Jersen				· · · · · An information of the state of the	1919 1. 9° 8			
General Site Info	ormation:	D:-				and a stand			
Site:		Uiamondba	CK State Tank Bat	ttery					
Company:	hin and C	ICUG Operat		T 4- 0		-			
Section, Towns	nip and Hange		15eC. 28	1-1/-S					
Lease Number:		- AMI-30-015-3	bazua Diamondb	ack StateW					
County:	·····	Eugy Count	22 206040 N		404 077770 144				
ard: Surface Our	<u></u>	Stata	32.80091° N		104.0///7° W				
Suriace UWNer:		Jolale							
Directions		From Hway 82	and CB-212 (Most a	of Loco Hillo	5.3 miles) travel south on CP-212.0.2 miles	rn			
		right 0.1 mi, tu	rn left 0.4 miles to lo	ocation					
Release Data					AND REAL AVEC STRAFT STRAFT				
Date Released	antintes vitil a Cart	4/25/2012			LEINERARCHICHTEREN IV. 1997 - TAMERINAR BARTEN IV. IV. 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1 LEINERARCHICHTERE	na a 684,3			
Type Released		Oil							
Source of Conter	nination [.]	Load line over	r pressured and r	uptured					
Fluid Released		39 bbls			· · · · · · · · · · · · · · · · · · ·	<u> </u>			
Fluids Recovered	<i>1</i> :	35 bbls							
Official Commu	nication 4		a da alta alta alta alta alta alta alta	رونس آنلۍ ه ^{ور کې} تو کې د مړې د. د ونس کې د مې د مې د کې		1.1			
Name	Pat Ellis	CRANTSPE AL STRUCTURE			lke Taravez	at the ?			
Company:					Tetra Tech				
Company:	LEGOW T	COG Operating, LLC							
Address:	1550 W. Texas Ave	. Ste. 1300	 		1910 N. BIG Spring				
P.O. Box			ļ						
City:	Midland Texas, 79	701			Midland, Texas				
Phone number:	(432) 686-3023				(432) 682-4559				
Fax:	(432) 684-7137								
Email:	pellis@conchoresc	ources.com			Ike.Tavarez@tetratech.com				
Ranking Criteria	//////////////////////////////////////		Banking Com		Cito Data				
250 ft	valci.		20		Jile Dala				
50-99 ft									
>100 ft.			0		0				
			I						
WellHead Protecti	ion:		Ranking Score		Site Data				
Water Source <1,0	JUU tt., Private <200	П	20						
vvaler Source >1,0	ουυ π., Ρηνατe >200 η	<u></u>	0		U				
Surface Body of V	Vater:		Ranking Score		Site Data				
<200 ft.			20						
200 ft - 1,000 ft.			10						
>1,000 ft.			0	-	0	to a spanne			
े	al Ranking Score	Accente	Die Soil BRAL (m	a/ka)	RECEIVED	1			
		Renzeno	Total RTEV	<u>:9/.°%</u> ТDU	ע א אוני אין אין אין אין אין אין אין אין אין אי				
		10	50	5,000	OCT 2 2 2012				
and the second data and the second data and the second data and	and a contract of the second				NILADOD ADTERIA				
						1			





October 8, 2012

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

Re: Closure Report for the COG Operating LLC., Diamondback State Tank Battery, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by COG Operating LLC. (COG) to assess a spill from Diamondback State Tank Battery, Section 28, Township 17 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.83314°, W 103.88694°. The site location is shown on Figures 1 and 2.

Background

According to the State of New Mexico Oil Conservation Division (NMOCD) Form C-141 Initial Report, the leak was discovered on April 25, 2012 and released approximately thirty-nine (39) barrels (bbls) of oil due to an over pressured load line rupturing. COG was able to recover approximately 35 bbls of oil with a vacuum truck. To alleviate the problem, COG repaired the line and installed a pressure vent.

The spill initiated from the load line and impacted an area approximately 15'x80'. The entire spill remained within the facilities berm. The spill areas are shown on Figures 3. The initial Form C-141 is enclosed in Appendix A.

Groundwater

The USGS did not report any water wells in Section 28. According to the NMOCD groundwater map, the average depth to groundwater is approximately 175' below surface. The groundwater data is shown in Appendix B.



Regulatory

A risk-based evaluation was performed for the Site in accordance with the 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

On May 30, 2012, Tetra Tech personnel inspected and sampled the spill area. A total of three (3) auger holes (AH-1 through AH-3) were installed using a stainless steel hand auger to assess the impacted area. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The sampling results are summarized in Table 1. The auger hole locations are shown on Figure 3.

Analytical Results

Referring to Table 1, all of the auger holes showed a shallow impact above the RRAL for TPH and BTEX. Deeper samples at 2-2.5' bgs for each auger hole delineated the impact below the RRAL for TPH and BTEX.

A shallow chloride impact was detected in AH-1 and AH-2 with concentrations of 2,600 mg/kg-and 1,880 mg/kg, respectively at 0-1' bgs. Bottom hole samples at 2-2.5' showed chloride concentrations less than 194 mg/kg.

Remediation and Conclusion

On August 13, 2012, Tetra Tech personnel supervised the excavation as stated in the approved work plan. In order to remove the hydrocarbon and elevated chloride concentrations, the excavation depths ranged from 1.0' to 2.0' below surface. Approximately 60 cubic yards of soil were removed and disposed of at R360 facility. The excavated areas were backfilled with clean material to grade then gravel was spread across the backfill area.



Based on the remediation activities performed at this location, COG requests closure for this site. The C-141 (Final) is included in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities performed at the site, please call me at (432) 682-4559.

Respectfully submitted, TETRATECH

Ike Tavarez Senior Project Manager

cc: Pat Ellis - COG

cc:

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Figures

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Drawn By: Isabel Marmolojo





Drewn By: Isabel Mannoleji



Drawn By: Isabel Marmolejo

Tables

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Table 1COG Operating LLC.Diamondback State Tank BatteryEddy County, New Mexico

Comple ID	Sample Date	Sample Depth (ft)	Soil	oil Status TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride		
	Sample Date		In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	5/30/2012	0-1		X	8,990	9,650	18,640	139	515	165	798	. 1,617	2,600
	n n	1-1.5		X	5,070	6,240	11,310	23.1	131	40.4	184	379	457
	11	2-2.5	Х		<100	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<1.00	194
			-								sik		
AH-2	5/30/2012	0-1		X	10,100	8,960	19,060	37.8	187	62.9	301	589	1,880
	19	1-1.5		X	5,360	4,780	10,140	13.8	99.8	43.7	193	350	311
	(1	2-2.5	Х	an teac	<100	<50.0	<100	<1.00	<1.00	<1.00	<1.00	<1.00	151
AH-3	5/30/2012	0-1	1977 - 1987 - A	X	4,030	7,090	11,120	. 16.3	110	47.2	229	403	72.9
	11	1-1.5	Х		<2.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	141
	"	2 - 2.5	Х		-	-	-	-	-	-	-	-	77.7

(--)

Not Analyzed

Excavated Depths

Photos

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COG Operating LLC Diamondback State Tank Battery Eddy County, New Mexico

Excavation View West - Area of AH-1 and 2

Excavation View East – Area of AH-3

COG Operating LLC Diamondback State Tank Battery Eddy County, New Mexico

retra tech

Backfill View South

Backfill View West

Gravel

Gravel

Appendix A

.

Form C-141 Revised October 10, 2003

Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, NM 87505 Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

			OPERATOR	Initial Report	Final Report	
Name of Company	COG Operating LL	С	Contact	Pat Ellis		
Address 550 W.	Fexas, Suite 1300 Midland, '	Texas 79701	Telephone No.	(432) 230-0077		
Facility Name Diamondback State Tank Battery			Facility Type	Tank Battery		
		10 10			20.015.22202	
Surface Owner	State Mineral Owne		r	Lease No. (API#) 30-015-33203		

	ourface owner.	June	Willer of Wiler	Deuse 110. (111 11) 50 015 55205
				Diamondback State #001 well
-				

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
G	28	175	29E					Eddy
			1					

Latitude N 32.853001° Longitude W 103.959150°

NATURE OF RELEASE

Type of Release: Oil	Volume of Release 39 bbls	Volume Recovered 35 bbls					
Source of Release: Load Line	Date and Hour of Occurrence	Date and Hour of Discovery					
	04/25/2012	04/25/2012 10:30 a.m.					
Was Immediate Notice Given?	If YES, To Whom?						
Yes 🗌 No 🗌 Not Required	Mike	BratcherOCD					
By Whom? Michelle Mullins	Date and Hour 04/26/2012 6:29	a.m.					
Was a Watercourse Reached?	If YES, Volume Impacting the Wa	atercourse.					
Yes 🛛 No	N/A						
If a Watercourse was Impacted, Describe Fully.*							
Describe Cause of Problem and Remedial Action Taken.*	· · · ·						
An increase in pressure inside the load line caused the line to split releasi	ng fluid onto the ground inside the be	rmed tank battery. A pressure vent has been					
added to the load line to prevent the buildup of pressure inside the load line	ne in the future.						
Describe Area Affected and Cleanup Action Taken *							
Describe Area Arrected and Cleanup Action Taken.							
Tetra Tech personnel inspected and assessed the spill area to define the extents Soil that exceeded the RRAL was removed and transported to proper a							
disposal. The site was then brought up to surface grade with clean backfill	I material. Tetra Tech prepared a clo	osure report and submitted it to NMOCD for					
review.	· · · · · · · · · · · · · · · · · · ·						
		· · ·					
I hereby certify that the information given above is true and complete to t	he best of my knowledge and underst	and that pursuant to NMOCD rules and					
regulations all operators are required to report and/or file certain release r	notifications and perform corrective ac	ctions for releases which may endanger					
public health or the environment. The acceptance of a C-141 report by th	e NMOCD marked as "Final Report"	does not relieve the operator of liability					
should their operations have failed to adequately investigate and remediat	te contamination that pose a threat to	ground water, surface water, human health					
or the environment. In addition, NMOCD acceptance of a C-141 report of	loes not relieve the operator of respon	sibility for compliance with any other					
rederal, state, or local laws and/or regulations.							
	<u>OIL CONSER</u>	VATION DIVISION					
Signature:							
	Ammund her District Surgerrison						
Printed Name: Ike Tavarez	Approved by District Supervisor:						
Title: Project Manager	Approval Date:	Expiration Date:					
E-mail Address: Ike. Tavarez@TetraTech.com	Conditions of Approval:	Attached \Box					
		a second second by the second s					

* Attach Additional Sheets If Necessary

State of New Mexico Energy Minerals and Natural Resources

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

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

Release Notification and Corrective Action

						OPERA	TOR		🛛 Initi	al Report		Final Repor
Name of Co	ompany	COG OP	ERATIN	GLLC		Contact	Pa	at Ellis				
Address	550 W.	Texas, Suite	100, Mi	dland, TX 7970	1 7	Telephone 1	No. 432-	230-007	17			
Facility Nat	me Di	amondback	State Tar	nk Battery		Facility Typ	e Tan	k Batter	у			
Surface Ow	mer St	ate		Mineral C)wner		· · · · · · · · · · · · · · · · · · ·		Lease 1 Dia	No. (API#) mondback) 30-01 State #	5-33203 #001 well
				LOCA	TION	OF REI	LEASE					
Unit Letter G	Section 28	Township 17S	Range 29E	Feet from the	North/	South Line	Feet from the	East/W	/est Line	County	Eddy	
				Latitude 32 4	18.699	Longita OF DEL	nde 104 04.646					
Time of Pole	nce Oil			INAI	URL	Volume of	Release 30hble	-	Volume	Perovered	Shble	
Source of Re	lease Load	line				Date and H	lour of Occurrence	e	Date and	Hour of Dis	coverv	
				****		04/25/2012	2		04/25/20	12 10:30 a.u	<u>n.</u>	
Was Immedi	Was Immediate Notice Given?						Whom?	Mike B	ratcher-O	CD		
By Whom?	Michelle N	Aullins				Date and I	lour 04/26/2012	6:29 a.r	n			
Was a Water	Was a Watercourse Reached?						dume Impacting t	he Wate	rcourse.			
If a Watercou	irse was Im	pacted, Descri	be Fully."	k		A						
Describe Cau	ise of Proble	em and Reme	lial Action	n Taken.*								
An increase i added to the	n pressure i load line to	nside the load prevent the bu	line cause aildup of p	ed the line to split pressure inside the	releasin load lin	g fluid onto t e in the futur	he ground inside e.	the berm	ed tank ba	uttery. A pro	essure v	ent has been
Describe Are	a Affected a	and Cleanup A	etion Tak	(en.*								
Initially 39bb truck. The er been removed remediation v	ols of oil wa ntire release d from the f work plan to	s released from was contained acility. Tetra the NMOCD	n the split d inside th Tech will for appro	load line inside the bermed walls of sample the spill s val prior to any si	he Diam f the faci ite area t gnifican	ondback Stat lity. The def o delineate a t remediation	e Tank Battery) fective load line h ny possible conta work.	We were as been 1 mination	able to re- repaired. A	cover 35bbl All released release and	s with a free flu we will	vacuum ids have present a
l hereby certi regulations al public health should their o or the enviror federal, state,	fy that the is or the envir operations homent. In a or local law	nformation given are required to conment. The ave failed to a ddition, NMO vs and/or regu	ven above o report an acceptanc dequately CD accep lations.	is true and compl id/or file certain re- e of a C-141 repo investigate and re- tance of a C-141 r	ete to the elease no rt by the emediate report do	e best of my stifications ar NMOCD ma contaminations ses not relieve	knowledge and un ad perform correct arked as "Final Re on that pose a thre e the operator of r	nderstand tive actic eport" do eat to gro esponsib	d that purs ons for rele es not reli ound water pility for co	evant to NM eases which eve the open , surface wa compliance w	OCD ru may en ator of ter, hur vith any	lles and danger liability nan health other
Signature	/	2:	7	~			OIL CONS	SERVA	ATION	DIVISIC	<u>N</u>	
Printed Name		Josh	Russo	<u> </u>	A	Approved by	District Superviso)r:			. <u></u>	
Title:		HSE Co	ordinator		A	pproval Dat	e:	E	xpiration	Date:		
E-mail Addre	<u>ss:</u>	jrusso@concl	oresource	es.com	c	Conditions of	Approval:			Attached		
Date: 05	5/03/2012	Phon	e: 432	2-212-2399								

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data Average Depth to Groundwater (ft) COG - Diamondback State Tank Battery Eddy County, New Mexico

	16 Sc	buth	28	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	16 Sc	outh	29	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 110	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

29 East

17 South

SITE

	16 Sc	outh	30	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	17	South		30 East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

	18	South		t		
6	5	4	3	2	1	•
7	8	9	10	11	12	
18	17	16	15	14	13	_
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	

	17 :	South		28 East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22 79	23	24
30	29	28	27	26	25
31	32	33	34 53	35	36

	18 Sc	outh	28	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 65	36

	18 Sc	outh		29 East	
6	5	4	3	2	1
7	8	9	10	11	12
18 	17	16 '	15	14	13
19	20	21	22	23	24
30	29	28	27	26	- 25
31	32	33	34	35	36

New Mexico State Engineers Well Reports

USGS Well Reports

Site Location - Diamondback State Tank Battery

Appendix C

Summary Report

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

Report Date: June 11, 2012

Work Order: 12060446

Project Location:	Eddy Co., NM
Project Name:	COG/Diamondback State Tank Battery
Project Number:	114-6401411

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
299873	AH-1 0-1'	soil	2012-05-30	00:00	2012-06-04
299874	AH-1 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299875	AH-1 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299876	AH-2 0-1'	soil	2012-05-30	00:00	2012-06-04
299877	AH-2 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299878	AH-2 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299879	AH-3 0-1'	soil	2012-05-30	00:00	2012-06-04
299880	AH-3 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299881	AH-3 2-2.5'	soil	2012-05-30	00:00	2012-06-04

]	BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
299873 - AH-1 0-1'	139	515 Je	165	798 Jo	9650	8990
299874 - AH-1 1-1.5'	23.1	131	40.4	184	6240	5070
299875 - AH-1 2-2.5'	<1.00	< 1.00	<1.00	<1.00	<50.0	<100
299876 - AH-2 0-1'	37.8	187	62.9	301	8960	10100
299877 - AH-2 1-1.5'	13.8	99.8	43.7	193	4780	5360
299878 - AH-2 2-2.5'	<1.00	<1.00	<1.00	<1.00	<50.0	<100
299879 - AH-3 0-1'	16.3	110	47.2	229	7090	4030
299880 - AH-3 1-1.5'	< 0.0200	< 0.0200	< 0.0200	<0.0200	<50.0	<2.00

Sample: 299873 - AH-1 0-1'

Param	Flag	Result	Units	\mathbf{RL}
Chloride		2600	mg/Kg_	4

Report Date: June 11, 2012		Work Order: 12060446	Page 1	Page Number: 2 of 2		
Sample: 299874 -	AH-1 1-1.5'					
Param	Flag	Result	Units	RL		
Chloride		457	mg/Kg	4		
Sample: 299875 -	AH-1 2-2.5'					
Param	Flag	Result	Units	RL		
Chloride		194	mg/Kg	4		
Sample: 299876 -	AH-2 0-1'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		1880	mg/Kg	4		
Sample: 299877 -	AH-2 1-1.5'					
Param	Flag	Result	Units	\mathbf{RL}		
Chloride		311	mg/Kg	4		
Sample: 299878 -	AH-2 2-2.5'					
Param	Flag	Result	Units	RL		
Chloride		151	mg/Kg	4		
Sample: 299879 -	AH-3 0-1'					
Param	Flag	Result	Units	RL		
Chloride		72.9	mg/Kg	4		
Sample: 299880 -	AH-3 1-1.5'					
Param	Flag	Result	Units	RL		
Chloride		141	mg/Kg	4		
Sample: 299881 -	AH-3 2-2.5'					
Sample: 299881 - Param	AH-3 2-2.5' Flag	Result	Units	RL		

TraceAnalysis. Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296

E-Mail: lab@traceanalysis.com WEB! www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: June 11, 2012

Work Order: 12060446

Project Location:Eddy Co., NMProject Name:COG/Diamondback State Tank BatteryProject Number:114-6401411

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
299873	AH-1 0-1'	soil	2012-05-30	00:00	2012-06-04
299874	AH-1 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299875	AH-1 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299876	AH-2 0-1'	soil	2012-05-30	00:00	2012-06-04
299877	AH-2 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299878	AH-2 2-2.5'	soil	2012-05-30	00:00	2012-06-04
299879	AH-3 0-1'	soil	2012-05-30	00:00	2012-06-04
299880	AH-3 1-1.5'	soil	2012-05-30	00:00	2012-06-04
299881	AH-3 2-2.5'	soil	2012-05-30	00:00	2012-06-04

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

Blain Lepturch

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

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Report Contents

Case Narrative	5
Analytical Report	6
Sample 299873 (AH-1 0-1')	6
Sample 299874 (AH-1 1-1.5')	7
Sample 299875 (AH-1 2-2.5')	8
Sample 299876 (AH-2 0-1')	10
Sample 299877 (AH-2 1-1.5')	11
Sample 299878 (AH-2 2-2.5')	13
Sample 299879 (AH-3 0-1')	14
Sample 299880 (AH-3 1-1.5')	16
Sample 299881 (AH-3 2-2.5')	17
Method Blanks	19
QC Batch 91895 - Method Blank (1)	19
QC Batch 91950 - Method Blank (1)	19
QC Batch 91952 - Method Blank (1)	19
QC Batch 91956 - Method Blank (1)	20
QC Batch 91972 - Method Blank (1)	20
QC Batch 91973 - Method Blank (1)	20
QC Batch 91974 - Method Blank (1)	21
QC Batch 91975 - Method Blank (1)	21
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OC Batch 91950 - LCS (1)	23
OC Batch 91952 - LCS (1)	24
QC Batch $91956 - LCS(1)$	24
QC Batch $91972 - LCS(1)$	25
QC Batch 91973 - LCS (1)	25
QC Batch $91974 - LCS(1)$	26
QC Batch 91975 - LCS (1)	26
QC Batch 91976 - LCS (1)	27
QC Batch 91895 - MS (1)	27
QC Batch 91950 - MS (1)	28
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QC Batch 91956 - MS (1)	29
QC Batch 91972 - MS (1)	29
QC Batch 91973 - MS (1)	30
QC Batch 91974 - MS (1)	30
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QC Batch 91895 - CCV (2)

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QC Batch 91950 - CCV (2)		 				33
QC Batch 91950 - $CCV(3)$		 				33
QC Batch 91952 - $CCV(2)$						34
QC Batch 91952 - CCV (3)						34
QC Batch 91956 - $CCV(1)$	•••	 				34
QC Batch 91956 - CCV (2)						34
QC Batch 91972 - CCV (1)						35
QC Batch 91972 - CCV (2)		 •				35
QC Batch 91972 - $CCV(3)$						35
QC Batch 91973 - CCV (1)						36
QC Batch 91973 - CCV (2)						36
QC Batch 91973 - CCV (3)						36
QC Batch 91974 - CCV (1)						36
QC Batch 91974 - CCV (2)						36
QC Batch 91975 - CCV (1)						37
QC Batch 91975 - CCV (2)						37
QC Batch 91976 - CCV (1)						37
QC Batch 91976 - CCV (2)		 •	· •	•	 •	37
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Case Narrative

Samples for project COG/Diamondback State Tank Battery were received by TraceAnalysis, Inc. on 2012-06-04 and assigned to work order 12060446. Samples for work order 12060446 were received intact at a temperature of 2.6 C.

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

		Prep	Prep	\mathbf{QC}	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	77967	2012-06-06 at 08:30	91895	2012-06-06 at 09:20
BTEX	S 8021B	78016	2012-06-08 at 14:30	91972	2012-06-08 at 15:06
BTEX	S 8021B	78029	2012-06-09 at 11:00	91974	2012-06-09 at 12:49
Chloride (Titration)	SM 4500-Cl B	78014	2012-06-06 at 10:51	91956	2012-06-06 at 14:53
TPH DRO - NEW	S 8015 D	78010	2012-06-07 at 15:30	91950	2012-06-07 at 15:00
TPH DRO - NEW	S 8015 D	78010	2012-06-07 at 15:30	91952	2012-06-07 at 15:00
TPH DRO - NEW	S 8015 D	78030	2012-06-09 at 11:00	91976	2012-06-09 at 14:05
TPH GRO	S 8015 D	78016	2012-06-08 at 14:30	91973	2012-06-08 at 15:32
TPH GRO	S 8015 D	78029	2012-06-09 at 11:00	91975	2012-06-09 at 13:15

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 12060446 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: June 11, 2012 114-6401411

Work Order: 12060446 COG/Diamondback State Tank Battery Page Number: 6 of 39 Eddy Co., NM

Analytical Report

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland										
Analysis:	BTEX		A	Analytical	Method:	S 8021	В		Prep Met	S 5035	
QC Batch:	91895		I	Date Analyzed:			2012-06-06			By:	AG
Prep Batch:	77967		S	Sample Pi	reparation	ı: 2012-0	6-06		Prepared	By:	AG
						\mathbf{RL}					
Parameter		Flag		Cert		Result	Un	its	Dilution		\mathbf{RL}
Benzene				1		139	mg/I	Хg	50		0.0200
Toluene		Je		1		515	mg/I	ζg	50		0.0200
Ethylbenzene				1		165	mg/I	٢g	50		0.0200
Xylene	····	Je		1		798	mg/I	Кg	50		0.0200
								Spike	Percent	Re	covery
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery	L	imits
Trifluorotolue	ne (TFT)				52.0	mg/Kg	50	50.0	104	70	- 135.4
4-Bromofluoro	obenzene (4-BFB)	Qsr	Qar		129	mg/Kg	50	50.0	258	53.6	- 158.9

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland					
Analysis: Chloride (Titration)		Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	QC Batch: 91956		alyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample 1	Preparation:	2012-06-06	Prepared By:	AR
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}
Chloride			2600	mg/Kg	10	4.00

Sample: 299873 - AH-1 0-1'

Laboratory:	Midland					
Analysis: TPH DRO - NEW		A	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch: 91952		I	Date Analyzed:	Analyzed By:	AG	
Prep Batch:	rep Batch: 78010		ample Preparation:	2012-06-07	Prepared By:	AG
			\mathbf{RL}			
Parameter	Fla	g Cer	t Result	Units	Dilution	\mathbf{RL}
DRO		1	9650	mg/Kg	5	50.0

Report Date 114-6401411	: June 11	, 2012		COG/Di	Page N	Number: 7 of 39 Eddy Co., NM			
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qør		535	mg/Kg	5	100	535	49.3 - 157.5
Sample: 29	9873 - A	.H-1 0-1'	I.						
Laboratory:	Midland	l							
Analysis:	TPH G	RO		Analyti	cal Method:	S 8015 D		Prep Me	ethod: S 5035
QC Batch:	91973			Date A	nalyzed:	2012-06-08		Analyze	d By: AG
Prep Batch:	Prep Batch: 78016		Sample Preparation: 2012-06-08 Prepare					i By: AG	

				RL				
Parameter	Flag	Cert 1		Result 8990	Units mg/Kg		Dilution	RL
GRO							500	2.00
						Spike	Percent	Recovery
Surrogate	Flag	\mathbf{Cert}	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			403	mg/Kg	500	500	81	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			428	mg/Kg	500	500	86	45.1 - 162.2

Sample: 299874 - AH-1 1-1.5'

Laboratory: Midland Analysis: BTEX QC Batch: 91972 Prep Batch: 78016		Analytica Date Ana Sample F	al Method: alyzed: 'reparation	S 8021 2012-0 : 2012-0	S 8021B 2012-06-08 2012-06-08			nod: S 5035 By: AG By: AG
		•		RL				
Parameter	Flag	Cert	. 1	Result	Un	its	Dilution	RL
Benzene		1		23.1	mg/	Kg	500	0.0200
Toluene		1		131	mg/	Kg	500	0.0200
Ethylbenzene		1		40.4	mg/	Kg	500	0.0200
Xylene		1		184	mg/	Kg	500	0.0200
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			489	mg/Kg	500	500	98	70 - 135.4
4-Bromofluorobenzene (4-BFB)			418	mg/Kg	500	500	84	53.6 - 158.9

Sample: 299874 Laboratory: Mic Analysis: Chl QC Batch: 919 Prep Batch: 780 Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate a-Tricosane c Sample: 299874 Laboratory: Mic	- AH-1 1- land oride (Titrat 56 14 - AH-1 1- land 1 DRO - NE 52 10 Flag	1.5' tion) Flag 1.5' EW	Ana Date Sam Cert An Da Sar Cert	alytical M e Analyz pple Prep alytical I te Analy mple Pre	Iethod: ed: aration: RL Result 457 Method: zed: paration: RL Result 6240	SM 4500-Cl 1 2012-06-06 2012-06-06 Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	B hits Kg	Prep M Analyz Prepar Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By: red By: Method: zed By: red By:
Laboratory: Mic Analysis: Chi QC Batch: 919 Prep Batch: 780 Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate a-Tricosane c Sample: 299874 Laboratory: Mic	land oride (Titrat 56 14 - AH-1 1- land 1 DRO - NE 52 10 Flag	tion) Flag 1.5' EW Flag	Ana Dati Sam Cert An Da Sar Cert	alytical M e Analyz pple Prep alytical I te Analy mple Pre	Iethod: ed: aration: RL Result 457 Method: zed: paration: RL Result 6240	SM 4500-Cl 1 2012-06-06 2012-06-06 Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	B nits Kg	Prep M Analy: Prepar Dilution 5 Prep M Analy: Prepar	Method: zed By: red By: Method: zed By: red By:
Analysis: Chl QC Batch: 919 Prep Batch: 780 Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	Flag	Flag 1.5' EW	Ana Date Sam Cert An Da San Cert	alytical M e Analyz pple Prep alytical I te Analy mple Pre	Iethod: ed: aration: RL Result 457 Method: zed: paration: RL Result 6240	SM 4500-Cl 1 2012-06-06 2012-06-06 Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	nits Kg	Prep M Analyz Prepar Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By: red By: Method: zed By: red By:
QC Batch: 919 Prep Batch: 780 Parameter 780 Chloride 919 Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter 780 QC Batch: 919 Prep Batch: 780 Surrogate 780 Surrogate 6 Analysis: C Analysis: TP QC Batch: 919 Prep Batch: 780 Surrogate 6 Analysis: C Surrogate 6 Analysis: 74 Laboratory: Mic Analysis: 79	56 14 - AH-1 1- land 1 DRO - NE 52 10 Flag	Flag 1.5' EW Flag	Dati Sam Cert An Da San Cert	e Analyz ple Prep alytical I te Analy mple Pre	ed: aration: RL Result 457 Method: zed: paration: RL Result 6240	2012-06-06 2012-06-06 Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	iits Kg	Analyz Prepar Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By:
Prep Batch: 780 Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate a-Tricosane c Sample: 299874 Laboratory: Mic Analysia TP Characeter Characet	14 - AH-1 1- land H DRO - NE 52 10 Flag	Flag 1.5' EW Flag	Sam Cert An Da Sar Cert	alytical l te Analy mple Pre	Method: zed: paration: RL Result 6240	2012-06-06 Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	iits Kg	Prepar Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By: red By:
Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	- AH-1 1- land 1 DRO - NE 52 10 Flag	Flag 1.5' EW Flag	Cert An Da Sar Cert	alytical I te Analy mple Pre	RL Result 457 Method: zed: paration: RL Result 6240	Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	uits Kg	Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By: red By:
Parameter Chloride Sample: 299874 Laboratory: Mic Analysis: TP: QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	- AH-1 1- land 1 DRO - NE 52 10 Flag	Flag 1.5' EW Flag	Cert An Da Sar Cert	alytical l te Analy mple Pre	Result 457 Method: zed: paration: RL Result 6240	Ur mg/ S 8015 D 2012-06-07 2012-06-07 Ur	iits Kg	Dilution 5 Prep M Analyz Prepar Dilution	Method: zed By: red By:
Chloride Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic Analysis: TP	- AH-1 1- land I DRO - NE 52 10 Flag	1.5' EW Flag	An Da Sar Cert	alytical l te Analy mple Pre	457 Method: zed: paration: RL Result 6240	mg/ S 8015 D 2012-06-07 2012-06-07 Ur	kg	5 Prep M Analyz Prepar Dilution	Method: zed By: red By:
Sample: 299874 Laboratory: Mic Analysis: TP QC Batch: 919 Prep Batch: 780 Parameter DRO Surrogate a-Tricosane c Sample: 299874 Laboratory: Mic	- AH-1 1- land H DRO - NE 52 10 Flag	1.5' SW Flag	An Da Sar <u>Cert</u>	alytical l te Analy mple Pre	Method: zed: paration: RL Result	S 8015 D 2012-06-07 2012-06-07 Ur	nits	Prep M Analy: Prepar Dilution	Method: zed By: red By:
Parameter DRO Surrogate n-Tricosane Sample: 299874 Laboratory: Mic	Flag	Flag	Cert		Result	Ur	nits	Prepared By: Dilution	
DRO Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	Flag		1		6240			Diffution	
Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	Flag				0240	mg/	Kg	5	
Surrogate n-Tricosane c Sample: 299874 Laboratory: Mic	Flag					S	pike	Percent	Reco
n-Tricosane c Sample: 299874 Laboratory: Mic		\mathbf{Cert}	Result	Units	s Di	lution Ar	nount	Recovery	Lin
Sample: 299874 Liaboratory: Mic	er Qer		387	mg/K	g	5	100	387	49.3 -
Laboratory: Mic	A TT 1 1	1 29		• • [•]					
Laboratory: Mic	- An-1 1-	1.9							
			A	001 NT-+1	а. <u>с</u> о	015 D		Deam M.	thad (
Analysis: TP.	1 GRU 79		Analytic	cal wieth	001: 38	0 06 06 019 D		r rep Me	d D
y∪ Datch: 919 Drop Dotoby 790	10 16		Date Ar	nalyzea:	201 ionu 201	.4-UU-Uð 2 06 09		Analyzeo Dronoroz	цру: <i>I</i> 112-т. /
r rep Datch: 780	10		Sample	riepara	.1011. 201	.2-00-08		rieparet	1 Dy. 7
Parameter		Floo	Cont		RL Result	TT-	nite	Dilution	
RO		r idg			5070	01	Ka	500	
			I		0010	111g/	Spiko	Percent	Roce
Surrogate			a 1				Amount	I ELCEIIG	Lin
Thildron to lease 1	Surrogate Fla		ar (:ort	Recult	Unito	llilition	Amount	Recovers	1/11

Report Date: June 11, 2012 114-6401411		COG/Dia	Work Oro amondbao	Page Number: 9 of 39 Eddy Co., NM				
Sample: 299875 - AH-1 2-2.5	5'							
Laboratory: Midland								
Analysis: BTEX		Analytica	l Method	l: S 8021	В		Prep Met	thod: S 5035
QC Batch: 91974		Date Ana	lyzed:	2012-0	6-09		Analyzed	By: AG
Prep Batch: 78029 Sam		Sample P	reparatio	on: 2012-0	6-09		Prepared	By: AG
				\mathbf{RL}				
Parameter	Flag	Cert		Result	Un	its	Dilution	\mathbf{RL}
Benzene	U	1		<1.00	mg/1	Kg	50	0.0200
Toluene	U	1		<1.00	mg/I	Kg	50	0.0200
Ethylbenzene	U	1		< 1.00	mg/l	Kg	50	0.0200
Xylene	U	1		<1.00	mg/1	Kg	50	0.0200
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			53.8	mg/Kg	50	50.0	108	70 - 135.4
4-Bromofluorobenzene (4-BFB)			46.4	mg/Kg	50	50.0	93	53.6 - 158.9

Sample: 299875 - AH-1 2-2.5'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytic	al Method:	Prep Method:	N/A	
QC Batch:	91956	Date An	alyzed:	Analyzed By:	AR	
Prep Batch:	rep Batch: 78014		Preparation:	2012-06-06	Prepared By:	AR
			\mathbf{RL}			
Parameter	Flag	Cert	Result	Units	Dilution	$\overline{\mathrm{RL}}$
Chloride			194	mg/Kg	5	4.00

Sample: 299875 - AH-1 2-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	ratory: Midland ysis: TPH DRO - NEW Batch: 91976 Batch: 78030		An Dar Sar	alytical Me te Analyze nple Prepa	ethod: S 80 d: 2012 tration: 2012)15 D 2-06-09 2-06-09	Prep M Analyz Prepar	Method: N/A zed By: AG zed By: AG
					\mathbf{RL}			
Parameter		Flag	Cert]	Result	Units	Dilution	\mathbf{RL}
DRO	· · · · · · · · · · · · · · · · · · ·	U	1		<50.0	mg/Kg	1	50.0
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	·····		97.5	mg/Kg	1	100	98	55.1 - 135.7

Report Date: June 11, 2012 114-6401411	(V COG/Dia	Vork Ord mondbac	ler: 120604 ck State Ta	نىغىر مەتھ	Page Number: 10 of 39 Eddy Co., NM		
Sample: 299875 - AH-1 2-2.5'								
Laboratory: Midland								
Analysis: TPH GRO		Analytic	cal Metho	od: S 801	l5 D		Prep Met	hod: S 5035
QC Batch: 91975		Date Ar	alyzed:		Analyzed	By: AG		
Prep Batch: 78029	Sample Preparation: 2012-06-09 Prepa						Prepared	By: AG
				\mathbf{RL}				
Parameter F	lag	Cert		Result	U	nits	Dilution	\mathbf{RL}
GRO	U	1		<100	mg/	′Kg	50	2.00
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			46.6	mg/Kg	50	50.0	93	58.5 - 155.1
4-Bromofluorobenzene (4-BFB)			36.8	mg/Kg	50	50.0	74	45.1 - 162.2

Sample: 299876 - AH-2 0-1'

Laboratory:MidlandAnalysis:BTEXQC Batch:91895Prep Batch:77967]	Analytica Date Ana Sample Pi	l Method: lyzed: reparation	S 8021 2012-0 1: 2012-0	B 6-06 6-06		Prep Met Analyzed Prepared	hod: S By: A By: A	5035 G G
						\mathbf{RL}					
Parameter		Flag		Cert R		Result	Un	its	Dilution		RL
Benzene				i ·		37.8	- mg/I	ζg	50	0:	.0200
Toluene				1		187	mg/I	ζg	50	0.	.0200
Ethylbenzene	!			1		62.9	mg/I	ζg	50	0.	.0200
Xylene				1		301	mg/I	ζg	50	0.	.0200
								Spike	Percent	Recov	very
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limi	its
Trifluorotolue	ene (TFT)				52.0	mg/Kg	50	50.0	104	70 - 13	35.4
4-Bromofluor	obenzene (4-BFB)	Qsr	QBT	<u>.</u>	104	mg/Kg	50	50.0	208	53.6 - 1	158.9

Sample: 299876 - AH-2 0-1'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

Report Date 114-6401411	e: June 11,	2012		V COG/Dia	Vork Ord mondbac	er: 12060 k State T	446 ank Batte	ry	Page Nu	mber: 11 of 39 Eddy Co., NM
sample 2998	76 continue	ed								
						RI.				
Parameter			Flag	Cert		Result		Units	Dilution	RL
						BI.				
Parameter			Flag	Cert		Result		Units	Dilution	\mathbf{RL}
Chloride						1880	r	ng/Kg	10	4.00
Sample: 29	9876 - Al Midland	H-2 0-1	,							
Analysis:	TPH DR	O - NEV	N	An	alytical N	Aethod:	S 8015 E)	Prep M	fethod: N/A
QC Batch:	91952 78010			Da	te Analyz anlo Pror	zed:	2012-06-0	לן. זיר	Analyz	ed By: AG
r tep Daten.	10010			Sar	ubie i teł	Jarahon.	2012-00-	<i></i>	Tiepar	eu by. AG
						\mathbf{RL}				
Parameter	·····		Flag	Cert	. <u></u>	Result		Units	Dilution	RL
DRO				1		8960	n	ng/Kg	5	50.0
Surrogate		Flag	Cert	Result	Units	Dil	ution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Qar	Qar		506	mg/K	g	5	100	506	49.3 - 157.5
Sample: 29 Laboratory: Analysis: QC Batch: Prep Batch:	9 9876 - Al Midland TPH GR 91973 78016	H-2 0-1 O	,	Analytic Date Ar Sample	cal Metho nalyzed: Preparati	od: S 8(201 ion: 201	015 D 2-06-08 2-06-08		Prep Met Analyzed Prepared	thod: S 5035 By: AG By: AG
						\mathbf{RL}				
Parameter	<u>.</u>		Flag	Cert		Result		Units	Dilution	RL
GRO				1		10100	n	ng/Kg	200	2.00
Surrogate			Flag	Cert	Result	Units	Dilutio	Spike n Amount	Percent Recovery	Recovery Limits
Trifluorotolu	ene (TFT)				168	mg/Kg	200	200	84	58.5 - 155.1
4-Bromofluor	robenzene (4-BFB)			199	mg/Kg	200	200	100	45.1 - 162.2

Report Date: June 11, 2012 114-6401411	(V COG/Dia	Vork Orde mondback	Page Number: 12 of 39 Eddy Co., NM				
Sample: 299877 - AH-2 1-1.	5'							
Laboratory: Midland								
Analysis: BTEX		Analytica	l Method	: S 8021	В		Prep Met	hod: S 5035
QC Batch: 91972		Date Ana	lyzed:	2012-0	6-08		Analyzed	By: AG
Prep Batch: 78016		Sample P	reparation	n: 2012-0	6-08		Prepared	By: AG
				\mathbf{RL}				
Parameter	Flag	Cert		Result	Un	its	Dilution	RL
Benzene		1		13.8	mg/1	Kg	200	0.0200
Toluene		1		99.8	mg/I	Kg	200	0.0200
Ethylbenzene		1		43.7	mg/l	Kg	200	0.0200
Xylene	······································	1		193	mg/l	Kg	200	0.0200
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			192	mg/Kg	200	200	96	70 - 135.4
4-Bromofluorobenzene (4-BFB)			213	mg/Kg	200	200	106	53.6 - 158.9

Sample: 299877 - AH-2 1-1.5'

Laboratory:	Midland					
Analysis:	Chloride (Titration)	Analytical	l Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Anal	lyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Pr	reparation:	2012-06-06	Prepared By:	AR
		a second parts	RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride	<u></u>		311	mg/Kg	5	4.00
	······································					

Sample: 299877 - AH-2 1-1.5'

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Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DF 91952 78010	30 - NE'	W	Ana Dat San	alytical Met se Analyzed: aple Prepar	hod: S 80 : 2012 ation: 2012	15 D -06-07 -06-07	Prep M Analyz Prepar	Method: N/A aed By: AG red By: AG	
						\mathbf{RL}				
Parameter			Flag	\mathbf{Cert}	R	esult	Units	Dilution	RL	
DRO				1	- 4	1780	mg/Kg	5	50.0	_
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
n-Tricosane	Qsr	Qar		317	mg/Kg	5	100	317	49.3 - 157.5	

Report Date: June 11, 2012 114-6401411			C	۲ COG/Dia	Vork Ord mondbac		Page Number: 13 of 39 Eddy Co., NM			
Sample: 29	9877 - AH-2 1-1.	5'								
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH GRO 91973 78016			Analytic Date An Sample	cal Metho nalyzed: Preparat	od: S 801 2012- ion: 2012-	15 D -06-08 -06-08		Prep Met Analyzed Prepared	hod: S 5035 By: AG By: AG
						RL				
Parameter		Flag		Cert		\mathbf{Result}	Uı	nits	Dilution	\mathbf{RL}
GRO				1		5360	mg/	ΊKg	200	2.00
Surrogate			Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotolue	ma (TET)		Tiag		171	mg/Kg	200	200		58.5 - 155.1
4-Bromofluor	obenzene (4-BFB)				179	mg/Kg	200	200	90	45.1 - 162.2

Sample: 299878 - AH-2 2-2.5'

Laboratory: M Analysis: E QC Batch: 9 Prep Batch: 7	Midland 3TEX)1974 78029		Analytic Date An Sample H	al Methoo alyzed: Preparatio	l: S 802 2012-(on: 2012-(1B)6-09)6-09		Prep Met Analyzed Prepared	bhod: S 5035 By: AG By: AG	
					\mathbf{RL}					
Parameter		Flag	Cert	,	Result	U	nits	Dilution	RL	
Benzene	· · · · · · · · · · · · · · · · · · ·	υ	î		<1.00	mg/	′Kg			
Toluene		U	1		<1.00	mg/	′Kg	50	0.0200	
Ethylbenzene		υ	1		<1.00	mg/	′Kg	50	0.0200	
Xylene		U	1	··· ·	<1.00	mg/	′Kg	50	0.0200	
							Spike	Percent	Recovery	
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits	
Trifluorotoluene	e (TFT)			46.3	mg/Kg	50	50.0	93	70 - 135.4	
4-Bromofluorob	enzene (4-BFB)			35.6	mg/Kg	50	50.0	71	53.6 - 158.9	

Sample: 299878 - AH-2 2-2.5'

QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

Report Date 114-6401411	e: June 11, 2012		COG/	Work O Diamondb	order: 12060 back State T)446 Fank Batter	ry	Page Nur 1	nber: 14 of 39 Eddy Co., NM
sample 2998	78 continued								
					\mathbf{RL}				
Parameter		Flag	C	ert	Result		Units	Dilution	RL
					\mathbf{RL}				
Parameter		Flag	С	ert	Result		Units	Dilution	\mathbf{RL}
Chloride			······································		151	n	ng/Kg	5	4.00
Sample: 29	9878 - AH-2 2-	2.5'							
Laboratory:	Midland								
Analysis:	TPH DRO - NE	EW		Analytica	l Method:	S 8015 D		Prep M	lethod: N/A
QC Batch:	91976			Date Ana	lyzed:	2012-06-0)9	Analyz	ed By: AG
Prep Batch:	78030			Sample P	reparation:	2012-06-0)9	Prepar	ed By: AG
					RL				
Parameter		Flag	C	ert	Result		Units	Dilution	RL
DRO		U	· · · · · · · · · · · · · · · · · · ·	1	<50.0	m	ng/Kg	1	50.0
							Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Uni	ts Dil	ution	Amount	Recovery	Limits
n-Tricosane			104	mg/l	Kg	1	100	104	55.1 - 135.7
Sample: 29 Laboratory: Analysis:	9878 - AH-2 2- Midland TPH GRO	2.5'	Ana	lytical Met	chod: S 8	015 D		Prep Met	bod: S 5035
QC Batch:	91975		Date	e Analyzed	: 201	2-06-09		Analyzed	By: AG
Prep Batch:	78029		Sam	ple Prepar	ation: 201	2-06-09		Prepared	By: AG
_			~		RL				
Parameter		Flag	C	ert	Result		Units	Dilution	<u>RL</u>
GRU		U		1	<100	n	ng/Kg	50	2.00
G (/ D)			Spike	Percent	Recovery
Surrogate			rlag Cer	t Kesul	t Units	Dilution	n Amount	Recovery	Limits
1 rinuorotolu	ene (IFT)	2		40.8	mg/Kg	50	50.0	82 54	08.0 - 100.1 45 1 160 0
4-Bromofiuol	covenzene (4-BFB	9		26.	9 mg/Kg	50	50.0	54	45.1 - 162.2

Report Date: June 11, 2012 114-6401411		C	W OG/Diai	Vork Order mondback	Page Number: 15 of 39 Eddy Co., NM				
Sample: 299879 - AH-3 0-1'									
Laboratory: Midland									
Analysis: BTEX		A	nalytica	l Method:	S 8021	В		Prep Met	hod: S 5035
QC Batch: 91895		D	ate Ana	lyzed:	2012-0	6-06		Analyzed	By: AG
Prep Batch: 77967		S	ample P	reparation:	2012-0	6-06		Prepared	By: AG
					\mathbf{RL}				
Parameter	Flag		Cert	F	Result	Uni	its	Dilution	\mathbf{RL}
Benzene			1		16.3	mg/I	۲g	50	0.0200
Toluene			1		110	mg/I	ζg	50	0.0200
Ethylbenzene			1		47.2	mg/I	ζg	50	0.0200
Xylene			1		229	mg/I	٢g	50	0.0200
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				52.0	mg/Kg	50	50.0	104	70 - 135.4
4-Bromofluorobenzene (4-BFB)	Qsr	Qsr		99.7	mg/Kg	50	50.0	199	53.6 - 158.9

Sample: 299879 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titra 91956 78014	ation)	Analytica Date Ana Sample F	al Method: alyzed: Preparation:	SM 4500-Cl B 2012-06-06 2012-06-06	Prep Method: Analyzed By: Prepared By:	N/A AR AR
 Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride	<u> </u>			72.9	mg/Kg	5	4.00
	-	· · · · · · · · · · · · · · · · · · ·			<u> </u>		

. . .

Sample: 299879 - AH-3 0-1'

DRO				1	7	090	mg/Kg	5		50.0
Parameter		<u> </u>	Flag	Cert	Re	RL esult	Units	Dilution		RL
Laboratory: Analysis: QC Batch: Prep Batch:	TPH DI 91952 78010	RO - NE	W	Ana Dat Sam	lytical Meth e Analyzed: ple Prepara	nod: S 801 2012- tion: 2012-	5 D 06-07 06-07	Prep M Analyz Prepare	fethod: A ed By: A ed By: A	V/A AG AG

Report Date: June 11, 2012	Work Order: 12060446	Page Number: 16 of 39
114-6401411	COG/Diamondback State Tank Battery	Eddy Co., NM

Sample: 299879 - AH-3 0-1'

Laboratory: Analysis: QC Batch:	Midland TPH GRO 91973			Analyti Date Ar	cal Metho 1alyzed:	od: S : 20	8015 D 12-06-08			Prep Met Analyzed	thod: S 5035 By: AG
Prep Batch:	78016			Sample Preparation: 2012-06-08		Prepared	By: AG				
						RL					
Parameter		Flag		Cert		Result		Units		Dilution	RL
GRO				1		4030		mg/Kg		200	2.00
								S	pike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Diluti	on An	nount	Recovery	Limits
Trifluorotolue	ene (TFT)				163	mg/K	g 200		200	82	58.5 - 155.1
4-Bromofluor	obenzene (4-BFB)				145	mg/K	g 200		200	72	45.1 - 162.2

Sample: 299880 - AH-3 1-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland BTEX 91972 78016		Analytica Date Ana Sample F	al Method alyzed: Preparatio	l: S 8021 2012-0 m: 2012-0	1B)6-08)6-08		Prep Met Analyzed Prepared	hod: S 5035 By: AG By: AG
					\mathbf{RL}				
Parameter		Flag	Cert		Result	U	nits	Dilution	\mathbf{RL}
Benzene		Ü	1	· · ·	< 0.0200	mg/	'Kg	1	0.0200
Toluene		U	1		<0.0200	mg/	'Kg	1	0.0200
Ethylbenzene		υ	1		< 0.0200	mg/	'Kg	1	0.0200
Xylene		U	1		<0.0200	mg/	′Kg	1	0.0200
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolue	ne (TFT)			2.54	mg/Kg	1	2.00	127	70 - 135.4
4-Bromofluor	obenzene (4-BFB)			2.78	mg/Kg	1	2.00	139	53.6 - 158.9

Sample: 299880 - AH-3 1-1.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	91956	Date Analyzed:	2012-06-06	Analyzed By:	AR
Prep Batch:	78014	Sample Preparation:	2012-06-06	Prepared By:	AR

continued ...

Report Date 114-6401411	e: June 11, 2012		Work Order: 12060446 COG/Diamondback State Tank Battery					Page Number: 17 of 39 Eddy Co., NM		
sample 2998	80 continued									
					RL					
Parameter		Flag	Cert		Result		Units	Dilution	RL	
					RL					
Parameter		Flag	Cert		Result		Units	Dilution	RL	
Chloride					141	n	ng/Kg	5	4.00	
Sample: 29	9880 - AH-3 1-1.	.5'								
Laboratory:	Midland	X 7	4 m	alution N	lothodi	S 2015 D	1	Prop M	athod: N/A	
OC Batch:	91950	v	Da	te Analyz	ed:	2012-06-0)7	Analyz	ed By: AG	
Prep Batch:	78010		Sau	mple Prep	paration:	2012-06-0)7	Prepare	ed By: AG	
-										
Demander			C+		RL		TInita	Dilution	DI	
DRO	<u> </u>	riag	Cert	<u> </u>	$\frac{1}{50.0}$		omts og/Kg	1	<u>50.0</u>	
							-6/6			
							Spike	Percent	Recovery	
Surrogate	Flag	Cert	Result	Units	Dih	ition	Amount	Recovery	Limits	
n-Tricosane			98.2	mg/Kg		1	100	98	55.1 - 135.7	
Sample: 29	9880 - AH-3 1-1	.5'								
Laboratory:	Midland		A malarti	ant Matha	J. 9.0	15 D		Prop Mot	had 8 5025	
OC Batch:	91973		Date Ar	cai metno nalvzed:	201	2-06-08			Bv: AG	
Prep Batch:	78016		Sample	Preparati	on: 201	2-06-08		Prepared	By: AG	
-			-	-				-	-	
Denometer		Elo «	Cost		RL		Unita	Dilution	זמ	
GBO		r lag			< 2.00	m	omis ng/Kg	1	2.00	
							-0/0		~.00	
a .			. a.	D	** •-	D1	Spike	Percent	Recovery	
Surrogate	ana (mpm)	F	lag Cert	Result	Units	Dilution	n Amount	Recovery	Limits	
4-Bromofluor	cohenzene (4-RFR)			2.19 2.10	mg/Kg	1	⊿.00 2.00	105	00.0 ~ 100.1 45 1 ~ 162 9	
* DIOIDOIDUUO	obemente (4-DI-D)			2.10	mg/ mg	<u> </u>	4.00	100	+0.1 - 104.4	

Report Date 114-6401411	: June 11, 2012	Work COG/Diamon	Order: 1206 dback State '	0446 Fank Battery	Page Number: 18 of 39 Eddy Co., NM		
Sample: 29	9881 - AH-3 2-2.5'						
Laboratory:	Midland						
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method:	N/A	
QC Batch:	91956	Date An	alyzed:	2012-06-06	Analyzed By:	AR	
Prep Batch:	78014	Sample	Preparation:	2012-06-06	Prepared By:	AR	
			RL				
Parameter	Flag	Cert	Result	Units	Dilution	\mathbf{RL}	
Chloride			77.7	mg/Kg	5	4.00	

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Method Blank (1)

Work Order: 12060446 COG/Diamondback State Tank Battery Page Number: 19 of 39 Eddy Co., NM

Method Blanks

Method Blank (1)	QC Batch: 91895
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QC Batch: 91895		Date Analyzed:			-06	Analyz	zed By:	\mathbf{AG}	
Prep Batch: 77967		QC Pi	QC Preparation:		2012-06-06			red By:	AG
					MDL				
Parameter	Flag		Cert		Result		Units		\mathbf{RL}
Benzene			1		< 0.00470		mg/Kg		0.02
Toluene			1		< 0.00980		mg/Kg		0.02
Ethylbenzene			1		< 0.00500		m mg/Kg		0.02
Xylene			1		< 0.0170		mg/Kg		0.02
						Spike	Percent	Reco	very
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Lin	its
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	78 - 1	23.6
4-Bromofluorobenzene (4-BFB)			1.61	mg/Kg	1	2.00	80	51.3 -	122.4

QC-Batch: Prep Batch:	91950 78010			Date-A QC Pi	Analyzed:- reparation:	2012-06-07 2012-06-07		Analy Prepa	yzed By: AG ared By: AG
				,			MDL		
Parameter			\mathbf{F}	ag	\mathbf{Cert}		Result	Units	RL
DRO		······	·		1		<15.7	mg/Kg	50
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane				119	mg/Kg	1	100	119	61.6 - 141.2

Method Blank (1) QC Batch: 91952

QC Batch: 91950

QC Batch:	91952	Date Analyzed:	2012-06-07	Analyzed By:	AG
Prep Batch:	78010	QC Preparation:	2012-06-07	Prepared By:	AG

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Parameter DRO	<u>_</u>		Flag		Cert		MDL Result <14.5		Units mg/Kg	<u></u>	RL 50
Surrogate		Flag	Cert	Result	Units	Dih	ution A	Spike Amount	Percent Recovery	Rec Li	overy mits
n-Tricosane				122	mg/Kg		1	100	122	52 -	140.8
Method Blan	k (1)	QC E	Batch: 91956								
QC Batch: 9 Prep Batch: 7)1956 '8014			Date A QC Pi	Analyzed: reparation:	2012-06 2012-06	-06 -06		Analy: Prepa	zed By: red By:	AR AR
Denementer			Elo a		Cont		MDL Recult		IInita		זמ
Chloride			<u> </u>				<3.85		mg/Kg		4
Method Blan	k (1)	QC E	Batch: 91972								
QC Batch: 9	1972			Date	Analyzed:	2012-06-	-08		Analyz	zed By:	AG
Prep Batch: 7	8016			$QC P_1$	reparation:	2012-06	-08		Prepar	red By:	AG
					·		MDI				
Parameter			Flag	g	Cert		Result		Units		\mathbf{RL}
Benzene				· · ·	1		<0.00470		mg/Kg	······································	0.02
Toluene					1		< 0.00980	1	mg/Kg		0.02
Ethylbenzene					1		<0.00500		mg/Kg		0.02
Xylene					1		< 0.0170	 	mg/Kg		0.02
Surrogate			Flao	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Reco Lim	very
Trifluorotoluen		<u></u>	1 100		1 86	mø/Kø	1	2 00	03	78 - 1	23.6
4-Bromofluorob	o (+ r +	/ (ፈ_Rፑ₽\			1 59	mg/Kg	1	2.00	76	51 2	100.0
	onzene	(1-0)			1.04			<i>4.</i> 00		01.0 -	144.4

Method Blank (1) QC Batch: 91973

QC Batch:	91973	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	QC Preparation:	2012-06-08	Prepared By:	AG

114-6401411	Work Order: 12060446 COG/Diamondback State Tank Battery						Eddy Co., NM			
					MDL					
Parameter	Flag		Cert		Result		Units	R		
GRO			1		<1.22		mg/Kg	2		
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits		
Trifluorotoluene (TFT)			1.64	mg/Kg	1	2.00	82	78.6 - 13		
4-Bromofluorobenzene (4-BFB)			1.11	mg/Kg	1	2.00	56	51 - 130		
Method Blank (1) QC Batch	: 91974									
QC Batch: 91974		Date A	nalvzed:	2012-06-	.09		Analyz	ed Bv: AG		
Prep Batch: 78029		QC Pr	eparation:	2012-06-	09		Prepar	ed By: AG		
•		•					•	Ū		
					MDL					
Parameter	Flag		Cert		Result		Units	RI		
Benzene			1		< 0.00470		mg/Kg	0.0		
Toluene			1		< 0.00980		mg/Kg	0.0		
Ethylbenzene			1		< 0.00500		mg/Kg	0.0		
Xylene			1		< 0.0170		mg/Kg	0.0		
						Spike	Percent	Recovery		
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits		
Trifluorotoluene (TFT)			1.93	mg/Kg	1	2.00	96	78 - 123.6		
4-Bromofluorobenzene (4-BFB)			1.44	mg/Kg	. 1.	2.00	72	51.3 - 122.		
Method Blank (1) QC Batch	91975									
QC Batch: 91975		Date A	nalvzed:	2012-06-	09		Analyz	ed Bv: AG		
Prep Batch: 78029		QC Pr	eparation:	2012-06-	09		Prepar	ed By: AG		
-		-	-				•	-		
Parameter	Flor		Cont		MDL		IInito	'n		
	r lag		Cert	·			malka	ñ.		
			1	· · · · · · · · · · · · · · · · · · ·	<u> </u>		mg/ rg	2		
						Calles	Porcont	Decorror		
						эріке	rercent	necovery		
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits		
Surrogate Trifluorotoluene (TFT)	Flag	Cert	Result 1.62	Units mg/Kg	Dilution 1	Amount 2.00	Recovery 81	Limits 78.6 - 13		

.

Report Date: June 11, 2012 114-6401411	COG/D	Work Order: iamondback	12060446 State Tank Ba	Page Number: 22 of 39 Eddy Co., NM			
Method Blank (1) QC Bate	ch: 91976						
QC Batch: 91976	Date	Analyzed:	2012-06-09		Analy	zed By: AG	
Prep Batch: 78030	QC P	reparation:	2012-06-09		Prepa	ared By: AG	
]	MDL			
Parameter	Flag	Cert	R	\mathbf{esult}	Units	RL	
DRO		1	<	(15.7	mg/Kg	50	
				Spike	Percent	Recovery	
Surrogate Flag (Cert Result	Units	Dilution	Amount	Recovery	Limits	
n-Tricosane	137	mg/Kg	1	100	137	61.6 - 141.2	

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:	91895			Date Anal	Analyzed By: A					
Prep Batch:	77967			QC Prepa	ration: 20	12-06-06	6		Prepa	red By: AG
				LCS			Spike	Matrix		Rec.
Param		\mathbf{F}	\mathbf{C}	\mathbf{Result}	Units	Dil.	Amount	Result	Rec.	Limit
Benzene			1	2.12	mg/Kg	1	2.00	< 0.00470	106	86.5 - 124.9
Toluene			1	2.04	mg/Kg	1	2.00	<0.00980	102	84.7 - 122.5
Ethylbenzene			1	1.85	mg/Kg	1	2.00	< 0.00500	92	79.4 - 118.9
Xylene			1	5.37	mg/Kg	1	6.00	< 0.0170	90	77.5 - 119

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

_			LCSD			Spike	Matrix		RPD		
Param	F	С	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit	RPD	Limit
Benzene		1	2.18	mg/Kg	1	2.00	< 0.00470	109	86.5 - 124.9	3	20
Toluene		1	2.09	mg/Kg	1	2.00	< 0.00980	104	84.7 - 122.5	2	20
Ethylbenzene		1	1.89	mg/Kg	1	2.00	< 0.00500	94	79.4 - 118.9	2	20
Xylene		1	5.50	mg/Kg	1	6.00	< 0.0170	92	77.5 - 119	2	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.93	1.86	mg/Kg	1	2.00	96	93	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.24	2.02	mg/Kg	1	2.00	112	101	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch:	91950		I	Date Analy	zed: 201	2-06-07			Analy	zed By: AG
Prep Batch:	78010		C	QC Prepara	ation: 201	2-06-07			Prepa	red By: AG
				LCS			Spike	Matrix		Rec.
Param		\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO			1	246	mg/Kg	1	250	<15.7	98	66.9 - 119.9

Report Date: June 11, 2012 114-6401411		u	COG/D		Page Number: 24 of 3 Eddy Co., NM						
control spikes continued	Ð	a	LCSD	T T 11	וית	Spike	Matrix	Dee	Rec.	מחת	RPD
Param	F.	<u> </u>	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	249	mg/Kg	1	250	<15.7	100	66.9 - 119.9	1	20
Percent recovery is based on th	ae spike	e res	ult. RPD	is based	on the	spike and	spike dupl	icate re	sult.		
Surrogate	LC Resi	S	LCSD Result	Un	its	Dil	Spike Amount	LCS Bec	LCSD Bec	F	lec. imit
n-Tricosane	94.	$\frac{10}{0}$	94.4	mg	/Kg	1	100	94	94	76.8	- 140.2
QC Batch: 91952 Prep Batch: 78010			Date QC F	Analyze Preparati LCS	d: 20 on: 20	012-06-07 012-06-07	Spike	Ma	Analy Prepa	yzed By: ared By:	AG AG Rec.
Param		F	C R	esult	Units	Dil.	Amount	: Re	esult Rec	. <u> </u>	imit
DRO			1	246	mg/K	<u>g 1</u>	250	<	14.5 98	62	- 128.3
Percent recovery is based on th	ie spike	res	ult. RPD	is based	on the	spike and	spike dupl	icate re	sult.		
Param	F	C	LCSD Result	· · Units ·	Dil.	Spike Amount	Matrix t Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	246	mg/Kg	1	250	<14.5	98	62 - 128.3	0	20
Percent recovery is based on th	e spike	res	ult. RPD	is based	on the	spike and	spike dupl	icate re	sult.		
	\mathbf{LC}	S	LCSD				Spike	LCS	LCSD	R	lec.
Surrogate	Rest	ılt	Result	Un	its	Dil.	Amount	Rec.	Rec.	Li	mit
n-Tricosane	90.	7	92.2	mg	/Kg	1	100	91	92	58.6	- 149.6
Laboratory Control Spike (QC Batch: 91956 Prep Batch: 78014	(LCS-1	L)	Date QC F	Analyze Preparati	d: 20 on: 20	012-06-06 012-06-06			Analy Prepa	yzed By: ared By:	AR AR
Param		F	C I	LCS Result	Unit	s Dil.	Spike Amou	nt F	latrix Result Re	ec.	Rec. Limit
Unioride				2430	mg/ł	vg l	2500	<	<3.85 9	1 8	5 - 115

Report Date: June 11, 2012 114-6401411			COG/D	Page Ni	Page Number: 25 of 39 Eddy Co., NM						
Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2600	mg/Kg	1	2500	<3.85	104	85 - 115	7	20

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

Laboratory Control Spike (LCS-1)

QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	QC Preparation:	2012-06-08	Prepared By:	$\mathbf{A}\mathbf{G}$

			LCS			Spike	Matrix		Rec.	
Param	\mathbf{F}	\mathbf{C}	\mathbf{Result}	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit	
Benzene		1	2.00	mg/Kg	1	2.00	< 0.00470	100	86.5 - 124.9	
Toluene		1	1.95	mg/Kg	1	2.00	< 0.00980	98	84.7 - 122.5	
Ethylbenzene		1	1.97	mg/Kg	1	2.00	< 0.00500	98	79.4 - 118.9	
Xylene		1	5.80	mg/Kg	1	6.00	< 0.0170	97	77.5 - 119	

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

_			LCSD			Spike	Matrix		Rec.		RPD
Param	F	С	Result	Units	Dil.	Amount	\mathbf{Result}	Rec.	\mathbf{Limit}	RPD	Limit
Benzene		1	2.02	mg/Kg	1	2.00	< 0.00470	101	86.5 - 124.9	1	20
Toluene		1	2.02	mg/Kg	1	2.00	<0.00980	101	84.7 - 122.5	4	20
Ethylbenzene		1	2.03	mg/Kg	1	2.00	< 0.00500	102	79.4 - 118.9	3	20
Xylene		1	5.97	mg/Kg	1	6.00	<0.0170	100	77.5 - 119	3	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.02	2.08	mg/Kg	1	2.00	101	104	73.9 - 127
4-Bromofluorobenzene (4-BFB)	2.23	2.34	mg/Kg	1	2.00	112	117	65.4 - 149.9

Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	91973 78016		I C	Date Analy QC Prepara	vzed: 20 ation: 20	12-06-08 12-06-08			Analy: Prepa	zed By: AG red By: AG
Param		F	С	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO			1	14.7	mg/Kg	1	20.0	<1.22	74	65.3 - 105.7

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Param	F	С	LCSD Result	Uni	ts Di	Spike I. Amour	nt 1	Matrix Result	Rec.	F L	lec. imit	RPD	RPD Limit
GRO		1	14.3	mg/l	Kg 1	20.0		<1.22	72	65.3	- 105.7	3	20
Percent recovery is based on the	spike	e res	ult. RP	D is bas	sed on t	he spike a	nd sp	oike dup	olicate	result.			
			L	CS I	LCSD			SD	ike	LCS	LCSD	F	tec.
Surrogate			Res	sult F	Result	Units	Dil.	. Amo	ount	Rec.	Rec.	\mathbf{L}	mit
Trifluorotoluene (TFT)			1.	85	1.81	mg/Kg	1	2.	00	92	90	79 -	131.2
4-Bromofluorobenzene (4-BFB)			1.	65	1.54	mg/Kg	1	2.	00	82	77	56.4	- 136.6
QC Batch: 91974 Prep Batch: 78029		5	Dai QC	te Analy Prepai	yzed: ration:	2012-06-0 2012-06-0)9)9	Spike	M	atrix	Analy Prepa	zed By red By: F	AG AG Lec.
Param		F.	<u> </u>	tesult	Units	<u>5 Dil.</u>	A	mount	Ke	esult	Rec.		$\frac{\text{mit}}{104.0}$
Benzene			1	1.89	mg/K	.g I 		2.00	<0.	00470	94	80.0 84.7	- 124.9 199 5
Fthylhonzono			1	1.00	mg/K	.g 1 .a 1		2.00	<0.	00900	94 01	70 A	1180
Xulana			1	5.41	mg/K	g 1 a 1		2.00 6.00	<0.	00000	91	77.5	- 110.9
Persont recovery is based on the	anile			$\frac{0.41}{0.41}$	ing/in	bo eniko er	nd or	viko dur		rogult			
Tercent recovery is based on the	spike	c 163	unte nut	U 18 Uac	seu on c	ne apire a	na st	nike dup	meave	resure.			
			LCSD			Spike	N	Aatrix		I	Rec.		RPD
Param	F	С	Result	Units	s Dil.	Amount	; I	Result	Rec.	L	imit	RPD	Limit
Benzene		1	2.03	mg/K	.g 1	2.00	<	0.00470	102	86.5	- 124.9	7	20
Toluene		1	2.07	mg/K	g 1	2.00	<	0.00980	104	84.7	- 122.5	10	20
Ethylbenzene		1	2.07	mg/K	g 1	2.00	<	0.00500	104	79.4	- 118.9	13	20
Xylene		1	6.30	mg/K	. <u>g 1</u>	6.00		0.0170	105	77.8	5 - 119	15	20
Percent recovery is based on the	spike	e res	ult. RP	D is bas	sed on t	he spike a	nd sp	oike dup	olicate	result.			
			LC	CS I	LCSD			Sp	ike	LCS	LCSD	R	.ec.
Surrogate			Res	sult F	Result	Units	Dil.	Amo	ount	Rec.	Rec.	Li	mit
Trifluorotoluene (TFT)			1.	99	2.13	mg/Kg	1	2.	00	100	106	73.9	- 127
4-Bromofluorobenzene (4-BFB)			2.	14	2.53	mg/Kg	1	2.	00	107	126	65.4	- 149.9

Laboratory Control Spike (LCS-1)

QC Batch:	91975	Date Analyzed:	2012-06-09	Analyzed By:	AG
Prep Batch:	78029	QC Preparation:	2012-06-09	Prepared By:	AG

Report Date: June 11, 2012 114-6401411			COG	Work Diamor	dback	: 120604 State T	146 ank H	Battery			Page Nu	mber: 2 Eddy C	27 of 39 6., NM
-		-	~ .	LCS				Spike	M	latrix	-	F	lec.
Param		F.	<u>C</u>	Result	Unit	ts L	$\frac{1}{1}$	Amount	; <u> </u>	lesult	Rec.	<u></u>	imit
GRO			1	17.6	mg/1	ng	1	20.0		<1.22	88	65.3	- 105.7
Percent recovery is based on the	spike	e resi	ilt. RPI) is bas	ed on tl	he spike	and	spike dup	licate	result.			
			LCSD			Spi	ke	Matrix		R	lec.		RPD
Param	\mathbf{F}	С	Result	Unit	s Dil	l. Amo	unt	Result	Rec.	Li	imit	RPD	Limit
GRO		1	18.2	mg/k	g 1	20	.0	<1.22	91	65.3	- 105.7	3	20
Percent recovery is based on the	spike	e resi	ılt. RPI) is bas	ed on tl	he spike	and	spike dup	licate	result.			
·	•		тc	10 T	aan	-			1	T CO	T COD	T	
Sumomete				,5 L 	CSD	Unito	D	Spi Spi	ke	LCS	LCSD	ר ז	lec.
Triduorotoluono (TET)				$\frac{u_{1}}{22}$	87	mg/Kg		$\frac{1}{1}$ $\frac{1}{2}$	$\frac{1000}{10}$	<u>04</u>	<u></u> 04	70	121.2
4-Bromofluorobenzene (4-BFB)			1.6	50 . 57 ⁻	1 70	mg/Kg		1 2.0)0)0	84	85	56.4	- 136.6
Prep Batch: 78030		Ð	QC	Prepara	ation:	2012-06	-09	Spike	М	atrix	Prepa	red By: F	AG lec.
Param		<u> </u>	<u> </u>	Aesuit			11.	Amount	R	esuit			mit 110.0
DRO		-	1	200	mg/r	ng	1	200		10.7	102	00.9	- 119.9
Percent recovery is based on the	spike	e resu	ılt. RPI) is base	ed on th	he spike	and	spike dup	licate	result.			
			LCSD			Spi	ke	Matrix		R	lec.		RPD
Param	\mathbf{F}	С	Result	Unit	s Dil	. Amc	unt	Result	Rec.	Li	mit	RPD	Limit
DRO		1	264	mg/K	g 1	25	0	<15.7	106	66.9 ·	- 119.9	3	20
Percent recovery is based on the	spike	e resu	ılt. RPI) is base	ed on th	he spike	and	spike dup	licate	result.			
	τC	'C	t CSI	n				Spike	τc	i P		a	00
Surrogate	Res	nlt.	Resu	j lit. ⊺	Units	Dil		Amount	Re	י כי, כ.	Rec.	Li	mit.
n-Tricosane	10	$\frac{10}{4}$	103	n	ng/Kg	1		100	10	4	103	76.8	- 140.2
Matrix Spike (MS-1) Spike	ed Sa	mple	: 299882	2						<u>, </u>			

QC Batch:91895Date Analyzed:2012-06-06Analyzed By:AGPrep Batch:77967QC Preparation:2012-06-06Prepared By:AG

continued ...

Report Date: June 11, 2012 114-6401411			COC	Wor /Diamo	k Ordei ndback	r: 12060446 State Tank	Batte	ery			Page Nu	mber: 2 Eddy C	28 of 39 o., NM
matrix spikes continued													
				MS			\mathbf{Spi}	ike	Ma	ıtrix		F	lec.
Param]	F	C	Result	Unit	s Dil.	Amo	ount	Re	sult	Rec.	L	imit
				MQ			Sni	ko	Ма	triv		r	00
Param	,	F	C	Result	Unit	s Dil	Amo	unt	Re	sult	Rec	T.	imit
Bonzene				1 05	mg/K	σ 1	2 (<u>)0</u>	0	175	97	69.3	- 159 2
Toluene			1	1.90	mg/K	ω Γστ 1	2.0	0	0.0	538	94	68 7	- 157
Ethylbenzene			1	1.94	mg/K	ζσ 1	2.0	10	<00	00500	95	71.6	- 158.2
Xvlene			1	5.36	mg/K	lg 1	6.0	00	0.	.02	89	70.8	- 159.8
Percent recovery is based on the si	pike	res	sult. RF	D is bas	sed on t	he spike an	d spik	e dup	licate	result.			
						a 11							DDD
D	-	a	MSD	TT	וית	Spike	Ma	trix	n.	t T	tec.	מחח	RPD
Param	<u> </u>	<u> </u>	Result	Units	$\frac{5}{2}$ Dil.	Amount		sult	Rec.	<u> </u>	150.9	RPD	
Benzene		1	2.08	mg/K	g I	2.00	0.0	110 200	103	09.3	- 159.2	D C	20
Loluene Ethylkongono		1	2.07	mg/K	g 1	2.00	0.0	030	101	71.6	1500	0	20
Y vlene		1	2.01	mg/K	g I a 1	2.00 6.00	<0.0 0	0000 02	100	70.8	- 100.2	5	20 20
Rylene			0.00		<u>8</u> 1	0.00	1 1	1	<u> </u>	10.0	- 100.0		
Percent recovery is based on the sj	pike	res	ult. RF	'D is bas	sed on t	the spike an	d spik	e dup	licate i	result.			
]	MS	MSD			Sp	ike	MS	MSD	F	.ec.
Surrogate			R	esult I	Result	Units	Dil.	Amo	ount	Rec.	Rec.	Li	mit
Trifluorotoluene (TFT)		·	2	2.29	2.18	mg/Kg	1	<u> </u>	2	114	109	71.4	- 133.9
4-Bromofluorobenzene (4-BFB)			2	2.39	2.18	mg/Kg	1	4	2	120	109	72.6	- 144.1
Matrix Spike (MS-1) Spiked QC Batch: 91950 Prep Batch: 78010	Sai	mpl	e: 2998 Da Qo	90 ate Analy C Prepar	yzed: ration:	2012-06-07 2012-06-07	, ,				Analy Prepa	zed By: red By:	AG AG
D		-	a	MS			S	pike	Ma	atrix	7	R	ec.
Param		ť'	<u> </u>	Result	Uni	ts Dil.	An	nount	Re	esult	Rec.	Li	mit
DKU			1	246	mg/.	ng I		250	<	15.7	98	36.1	- 147.2

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

			MSD			Spike	Matrix		Rec.		RPD
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO		1	219	mg/Kg	1	250	<15.7	88	36.1 - 147.2	12	20

	MS	MSD			Spike	MS	MSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
n-Tricosane	91.3	88.0	mg/Kg	1 .	100	91	88	78.3 - 131.6

Report Date: June 11, 2012 114-6401411		COG/	Work (Diamond	Order: 1 back Sta	2060446 ite Tank I	Battery	- (Fg	Page Ni	umber: 2 Eddy (29 of 39 Co., NM
Matrix Spike (MS-1) Spi	ked Sample	e: 299940)							
QC Batch: 91952		Date	e Analyze	ed: 20	12-06-07			Anal	yzed By	: AG
Prep Batch: 78010		QC	Preparat	ion: 20	12-06-07			Prep	ared By	: AG
			MS			Spike	M	atrix		Rec
Param	\mathbf{F}	СЛ	Result	Units	Dil.	Amount	; Re	esult Rec	. 1	Limit
DRO		1	238	mg/Kg	; <u>1</u>	250	<	14.5 95	45.	5 - 127
Percent recovery is based on th	e spike rest	ult. RPI) is based	on the	spike and	spike dupl	icate re	sult.		
		MSD			Spike	Matrix		Rec.		RPD
Param	F C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
DRO	1	231	mg/Kg	g 1	250	<14.5	92	45.5 - 127	3	20
Percent recovery is based on th	e spike rest	ult. RPD) is based	on the	spike and	spike dupl	icate re	sult.		
	MS	MSI)			Spike	MS	MSD	F	lec.
Surrogate	Result	Resu	lt U	nits	Dil.	Amount	Rec.	. Rec.	\mathbf{L}	imit
n-Tricosane	94.8	94.9) mg	g/Kg	1	100	95	95	45.4	- 145.8
Matrix Spike (MS-1) Spi QC Batch: 91956 Prep Batch: 78014	ked Sample	e: 299882 Date QC	e Analyze Preparat	ed: 20 ion: 20	12-06-06 12-06-06			Anal: Prepa	yzed By ared By	: AR AR
· ·		. مو .	MS			Spike	Mat	rix	F	lec
Param	\mathbf{F}	C F	lesult	Units	Dil.	Amount	Res	ult Rec.	L	imit
Chloride		. 1	0500	mg/Kg	10	2500	838	80 85	79.4	- 120.6
Percent recovery is based on th	e spike rest	ılt. RPD) is based	on the	spike and	spike dupli	cate re	sult.		
		MSD			Spike	Matrix		Rec.		RPD
Param	F C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		10900	mg/Kg	10	2500	8380	101 '	79.4 - 120.6	4	20

Matrix Spike	(MS-1)	Spiked	Sample:	299940
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QC Batch:	91972	Date Analyzed:	2012-06-08	Analyzed By:	AG
Prep Batch:	78016	QC Preparation:	2012-06-08	Prepared By:	AG

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114-6401411			COG	/Diamon	idback S	tate Tank	Batte	ery				Eddy C	0., NM
				MS			Spi	ike	Ma	trix		F	lec.
Param		\mathbf{F}	C F	Result	Units	Dil.	Amo	ount	Re	sult	Rec.	\mathbf{L}	imit
Benzene			1	1.94	mg/Kg	1	2.0	00	<0.0	0470	97	69.3	- 159.2
Toluene			1	1.98	mg/Kg	1	2.0	00	< 0.0	0980	99	68.7	- 157
Ethylbenzene			1	2.17	mg/Kg	1	2.0	00	< 0.0	0500	108	71.6	- 158.2
Xylene			1	6.34	mg/Kg	; 1	6.0	00	<0.0	0170	106	70.8	- 159.8
Percent recovery is based on the	spike	e res	sult. RP	D is base	ed on th	e spike ar	d spik	e dupli	cate 1	esult.	_		
			MSD			Spike	Ma	trix		R	lec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Res	sult	Rec.	Li	mit	RPD	Limit
Benzene			1.82	mg/Kg	r 1	2.00	<0.0	0470	91	69.3	- 159.2	6	20
Toluene		1	1.84	mg/Ke	5 ×	2.00	<0.0	0980	92	68 7	- 157	7	20
Ethylbenzene		1	1 96	mg/Ka	5 - 5 1	2.00	<0.0	0500	98	71.6	- 158.2	10	20
Xvlene		1	5.68	mg/Ke	5 1 5 1	£.00	<0.0	0170	95	70.8	- 159.8	11	20
Porcent recovery is based on the	anil-			D is here	od on th	e eniko er	d anile	a dunli	ooto .				
r ercent recovery is based on the	spike	e res	uui. nr	L IS DAS	eu on in	e spike al	ia shiki	e aupii	caue I	couit.			
			N	AS N	MSD			Spil	æ	MS	MSD	F	lec.
Surrogate			Re	sult R	lesult	Units	Dil.	Amou	int	Rec.	Rec.	L	imit
$n \cdot n + 1 $ (mm)			<u></u>	11 .	2 36	mg/Kg	1	2		106	118	71.4	- 133.9
Influorotoluene (TFT)			2.	. 11	4.00	<u>116/116</u>	~	-		100	110	1 4 7 4	
4-Bromofluorobenzene (4-BFB)			2	.25	2.31	mg/Kg	1	2	<u></u>	112	116	72.6	- 144.1
Arifuorotoluene (1FT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike QC Batch: 91973 Prep Batch: 78016	ed Sa	mpl	2 2 e: 29988 Da QC	25 0 te Analy Prepara	2.31 2.31 zed: 2 ation: 2	mg/Kg 2012-06-08 2012-06-08	1 3 3	2		112	116 116 Analy Prepa	72.6 72ed By ared By:	- 144.1 : AG AG
A-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016	ed Sa	ımpl	2 2 e: 29988 Da QC	0 te Analy Prepara MS	2.31 2.31 zed: 2 ation: 2	mg/Kg 2012-06-08 2012-06-08	1 3 3 3 3 3	2 pike	Ma	112 112	116 116 Analy Prepa	72.6 rzed By red By:	- 144.1 AG AG
Arifuorotoluene (1F1) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param	ed Sa	mpl	2 2 e: 29988 Da QC	0 te Analy Prepara MS Result	2.31 2.31 zed: 2 ation: 2	mg/Kg 2012-06-08 2012-06-08	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	2 pike nount	Ma Re	112 112	Analy Prepa	72.6 vzed By red By:	- 144.1 AG AG tec.
Arifiuorotoluene (1FT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO	ed Sa	rmpl	2 2 e: 29988 Da QC C	0 te Analy Prepara MS Result 29.1	2.31 2.31 zed: 2 ation: 2 Units mg/K	mg/Kg 2012-06-08 2012-06-08 s Dil. g 1	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0	Ma Re	atrix esult .87	Analy Prepa Rec. 136	72.6 rzed By red By: F Li 28.2	- 144.1 AG AG tec. imit - 157.2
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the	ed Sa	mpl F	2 2 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	0 te Analy Prepara MS Result 29.1 D is base	2.31 2.31 zed: 2 ation: 2 Units mg/K ed on th	$\frac{mg}{Kg} = \frac{Dil}{2012-06-08}$	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie	Ma Re 1 cate 1	atrix esult .87 result.	Analy Prepa Rec. 136	72.6 vzed By red By: F L 28.2	- 144.1 AG AG tec. imit - 157.2
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the	ed Sa spike	F e res	2 2 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	0 te Analy Prepara MS Result 29.1 D is base	2.31 2.31 zed: 2 ation: 2 Units mg/K ed on th	2012-06-08 2012-06-08 2012-06-08 g 1 e spike an	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplic	Ma Re 1 cate 1	atrix esult .87 result.	Analy Prepa Rec. 136	72.6 rzed By red By: F L 28.2	- 144.1 AG AG tec. imit - 157.2
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the	ed Sa spike	F F e res	2 2 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	0 te Analy Prepara MS Result 29.1 D is base	2.31 2.31 zed: 2 ation: 2 <u>Units</u> <u>mg/K</u> ed on th	$\frac{mg}{Kg}$ $\frac{2012-06-08}{2012-06-08}$ $\frac{g}{1}$ $\frac{g}{1}$ $\frac{1}{Spike}$	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie ttrix	Ma Re 1 cate r	atrix esult .87 result.	Analy Prepa Rec. 136	72.6 72.6 yzed By red By: F L 28.2	- 144.1 - AG AG tec. imit - 157.2 RPD
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the Param Param	ed Sa spike F	F F C	e: 29988 Da QC <u>c</u> J sult. RP MSD Result	0 te Analy Prepara MS Result 29.1 D is base Units	2.31 2.31 zed: 2 ation: 2 <u>Units</u> <u>mg/K</u> ed on th s <u>Dil</u> .	2012-06-08 2012-06-08 2012-06-08 g 1 e spike an Spike Amoun	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie sult 1	Ma Re 1 cate 1 Rec.	atrix sult .87 result. R Lin	Analy Prepa Rec. 136 ec. mit	72.6 72.6 vzed By red By: F L 28.2 RPD	- 144.1 AG AG ec. imit - 157.2 RPD Limit
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Param GRO Param GRO	ed Sa spike F	F F C 1	e: 29988 Da QC <u>C</u> 1 Fult. RP Result 29.2	0 te Analy Prepara MS Result 29.1 D is base Units mg/K	2.31 2.31 2.31 2.31 2.31 2.31 2.31 2.31	2012-06-08 2012-06-08 2012-06-08 g 1 e spike an Spike Amoun 20.0	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie sult 1 87	Ma Re 1 cate 1 Rec. 146	$\frac{112}{112}$	Analy Prepa Rec. 136 ec. mit 157.2	72.6 rzed By red By: F L 28.2 RPD 0	- 144.1 AG AG tec. imit - 157.2 RPD Limit 20
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the Param GRO Percent recovery is based on the	ed Sa spike F spike	F e res	e: 29988 Da QC <u>1</u> wult. RP MSD Result 29.2 wult. RP	0 te Analy Prepara MS Result 29.1 D is base Units mg/K D is base	$\frac{2.31}{2.31}$	$\frac{11}{10}, 11g}$ $\frac{11}{10}, 11g$ $\frac{12}{10}, 11g$ 1	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplid sult 1 87 e duplid	Ma Re 1 cate 1 Rec. 146 cate 1	112 112 atrix esult .87 result. R Lin 28.2 - result.	Analy Prepa Rec. 136 ec. mit 157.2	72.6 72.6 vzed By red By: F L 28.2 RPD 0	- 144.1 AG AG tec. imit - 157.2 RPD Limit 20
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the GRO Percent recovery is based on the	ed Sa spike F spike	F e res	e: 29988 Da QC <u>C</u> 1 mult. RP MSD Result 29.2 mult. RP	0 te Analy Prepara MS Result 29.1 D is base <u>mg/K</u> D is base	$\frac{2.31}{2.31}$	$\frac{mg}{Kg}$ $\frac{2012-06-08}{2012-06-08}$ $\frac{g}{1}$ $\frac{1}{e \text{ spike an}}$ $\frac{Spike}{Amoun}$ $\frac{20.0}{e \text{ spike an}}$	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie sult 1 87 e duplie Spile	Ma Re 1 cate 1 Rec. 146 cate 1	atrix sult .87 result. R Lin 28.2 - result. MS	Analy Prepa Rec. 136 ec. mit 157.2 MSD	72.6 rzed By red By: F L 28.2 RPD 0	- 144.1 AG AG tec. imit - 157.2 RPD Limit 20
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the Param GRO Percent recovery is based on the Surrogate	ed Sa spike F spike	F e res C 1 e res	e: 29988 Da QC <u>C</u> 1 Fult. RP MSD Result 29.2 Fult. RP	25 25 0 te Analy Prepara MS Result 29.1 D is base <u>Units</u> <u>mg/K</u> D is base MS Sult R	$\frac{2.31}{2.31}$ $\frac{2.31}{2.31}$ $\frac{2.31}{2.31}$ $\frac{1.31}{2.31}$ $\frac{1.32}{2.31}$ $\frac{1.32}{2.31$	$\frac{mg}{Kg}$ $\frac{2012-06-08}{2012-06-08}$ $\frac{g}{1}$ $\frac{g}{1}$ $\frac{g}{20.0}$ $\frac{mg}{k}$ $\frac{mg}{k}$	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie sult 1 87 e duplie Spil Amou	Ma Re 1 cate 1 Rec. 146 cate 1 cate 1	112 112 112 112 112 112 112 112 112 112	Analy Prepa Rec. 136 ec. mit 157.2 MSD Rec.	72.6 rzed By red By: F Li 28.2 RPD 0	- 144.1 AG AG tec. imit - 157.2 RPD Limit 20 tec. imit
Influorotoluene (IFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spik QC Batch: 91973 Prep Batch: 78016 Param GRO Percent recovery is based on the Param GRO Percent recovery is based on the Surrogate Trifluorotoluene (TFT)	ed Sa spike F spike	F e res C 1 e res	e: 29988 Da QC 	0 te Analy Prepara MS Result 29.1 D is base <u>Units</u> mg/K D is base 4S N sult R 15	$\frac{2.31}{2.31}$ $\frac{2.31}{2.31}$ $\frac{2.31}{2.31}$ $\frac{2.31}{2.31}$ $\frac{1.32}{2.32}$	2012-06-08 2012-06-08 2012-06-08 3 Dil. g 1 e spike an Spike Amoun 20.0 e spike an Units mg/Kg	1 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	pike nount 20.0 e duplie atrix sult 1 87 e duplie Spik Amou 2	Ma Re 1 cate 1 Rec. 146 cate 1 cate 1 cate 1	atrix asult .87 result. R Lin 28.2 - result. MS Rec. 108	Analy Prepa Rec. 136 ec. mit 157.2 MSD Rec. 106	72.6 72.6 72.6 Pzed By red By F Li 28.2 RPD 0 F Li 75.5	- 144.1 AG AG tec. imit - 157.2 RPD Limit 20 tec. imit - 122.3

Report Date: June 11, 201 114-6401411	.2	COG	Work Diamond	Order: lback St	12060446 ate Tank	Battery		Page N	umber: 5 Eddy (31 of 39 20., NM
Matrix Spike (MS-1)	Spiked Samp	ole: 29996	3							
QC Batch: 91974		Dat	te Analvz	ed: 2	012-06-09	1		Ana	lvzed Bv	: AG
Prep Batch: 78029		QC	Preparat	tion: 2	012-06-09	1		Prep	pared By	AG
1		•	-					-	2	
			MS			Spike	Ma	trix	F	Rec.
Param	F	C R	lesult	Units	Dil.	Amount	Res	sult Rec.	\mathbf{L}	imit
Benzene		1	1.97	mg/Kg	1	2.00	<0.0	0470 98	69.3	- 159.2
Toluene		1	2.00	mg/Kg	1	2.00	<0.0	0980 100	68.7	′ - 157
Ethylbenzene		1	2.17	mg/Kg	1	2.00	<0.0	0500 108	71.6	- 158.2
Xylene		1	6.40	mg/Kg	1	6.00	<0.0)170 107	70.8	- 159.8
Percent recovery is based o	on the spike re	sult. RP	D is based	d on the	spike an	d spike dup	licate r	esult.		
		MSD			Spike	Matrix		Rec.		RPD
Param	F C	\mathbf{Result}	Units	Dil.	Amount	\mathbf{Result}	Rec.	Limit	RPD	Limit
Benzene	1	2.05	mg/Kg	1	2.00	< 0.00470	102	69.3 - 159.2	4	20
Toluene	1	2.13	mg/Kg	1	2.00	< 0.00980	106	68.7 - 157	6	20
Ethylbenzene	1	2.38	mg/Kg	1	2.00	< 0.00500	119	71.6 - 158.2	9	20
Xylene	1	7.03	mg/Kg	1	6.00	< 0.0170	117	70.8 - 159.8	9	20
Surrogate		M Re	IS M sult Re	ISD sult	Units	Spi Dil. Amo	ike ount	MS MSI Rec. Rec.) F	lec. imit
Trifluorotoluene (TFT)		1.	90 2	.38 1	mg/Kg	1 2	2	95 119	71.4	- 133.9
I-Bromofluorobenzene (4-E	BFB)	2.	24 2	.86 1	mg/Kg	1 2	2	112 143	72.6	- 144.1
Matrix Spike (MS-1)	Spiked Samp	le: 29996	3							
QC Batch: 91975		\mathbf{Da}	te Analyz	ed: 2	012-06-09			Anal	yzed By	AG
Prep Batch: 78029		\mathbf{QC}	Preparat	tion: 2	012-06-09			Prep	ared By:	AG
			MS			Snike	Ма	triv	F	ec
Param	F	С	Result	Units	Dil	Amount	Re	sult Rec	Li	mit
GBO	T		24.9	mg/Ko	r 1	20.0	~	22 124	28.2	- 157 2
			<u> </u>	1 1	· · · ·	3 . 11 . 1 . 1	<u></u>	1/		101.2
Percent recovery is based o	on the spike re	sult. RP	D is based	1 on the	spike an	a spike dupl	licate r	esult.		
		MSD			Spike	Matrix		Rec.		RPD
Param	F C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
GRO	1	26.3	mg/Kg	<u>; 1</u>	20.0	<1.22	132	28.2 - 157.2	6	20
Porcont recovery is based a	n the spiles re	cult DD	D je bager	d on the	enika an	d snike dun	icato -	eeult		
renembre recovery is based o	ni vile spike re	oun. mr	L IS DASEC		spine all	con	ntinued			·
						501				

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114-6401411			COG	/Diamo	ondback S	State Tank	Batter	у	<u> </u>		Eddy (Co., NM
matrix spikes continued												
				MS	MSD			Spike	\mathbb{N}	IS MSI)]	Rec.
Surrogate				Result	Result	Units	Dil.	Amour	t R	ec. Rec	. <u> </u>	imit
				MS	MSD			Spike	N	IS MSI		Rec.
Surrogate				Result	Result	Units	Dil.	Amour	t R	ec. Rec	. I	imit
Trifluorotoluene (TFT)				2.05	2.09	mg/Kg	1	2	1	02 104	75.5	- 122.3
4-Bromofluorobenzene (4-BFB)	Qsr	Qa	r	2.52	2.05	mg/Kg	1	2	1	26 102	77.9	- 122.4
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030	ed Sa	mpl	e: 29994 Da	l6 te Ana ! Preps	lyzed:	2012-06-09 2012-06-09				Anal Pren	yzed By ared By	r: AG
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030	ed Sa	mpl	e: 29994 Da Q(46 .te Ana 7 Prepa MS	lyzed: aration:	2012-06-09 2012-06-09	Sp	ike	Matri	Anal Prep x	yzed By ared By	r: AG : AG Rec.
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param	ed Sa	mpl F	e: 29994 Da Q(46 te Ana C Prepa MS Result	lyzed: aration: Unit	2012-06-09 2012-06-09 s Dil.	Sp Amo	ike ount	Matriz	Anal Prep x t Rec.	yzed By ared By I	r: AG : AG Rec.
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO	ed Sa	F	e: 29994 Da Q(<u>C</u>	te Ana C Prepa MS Result 243	lyzed: aration: Unit. mg/K	2012-06-09 2012-06-09 s Dil. g 1	Sp Amo 25	ike ount 50	Matri: Result 16.8	Anal Prep x t Rec. 90	yzed By ared By I <u>I</u> 36.1	r: AG : AG Rec. .imit - 147.2
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the	e spike	F e res	e: 29994 Da QC 	i6 te Ana Prepa MS Result 243 D is ba	lyzed: aration: Unit. mg/K ased on th	2012-06-09 2012-06-09 s Dil. g 1 e spike and	Sp Amo 25 I spike	ike ount 50 duplicat	Matri: Result 16.8 e resu	Anal Prep x t Rec. 90 lt.	yzed By ared By I <u>L</u> 36.1	r: AG : AG Rec. .imit - 147.2
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the	e spike	F e res	e: 29994 Da QC <u>C</u> ult. RP MSD	te Ana D'Prepa MS Result 243 D is ba	lyzed: aration: Unit mg/K ased on th	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike	Sp. Amo 25 I spike Mat:	ike bunt 50 duplicat rix	Matri: Result 16.8 e resu	Anal Prep x t Rec. 90 lt. Rec.	yzed By ared By I 36.1	r: AG : AG Rec. .imit - 147.2 RPD
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the Param	e spike	F e res	e: 29994 Da Q(<u>C</u> <u>1</u> ult. RP MSD Result	te Ana Prepa MS Result 243 D is ba	lyzed: aration: Unit mg/K ased on th its Dil.	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike Amount	Sp Amo 25 I spike Mat: Resu	ike bunt 50 duplicat rix 11t Re	Matri: Result 16.8 e resu	Anal Prep x t Rec. 90 lt. Rec. Limit	yzed By ared By I <u>I</u> 36.1 RPD	r: AG r: AG Rec. .imit - 147.2 RPD Limit
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the Param DRO	ed Sa e spike F	F <u>C</u> 1	e: 29994 Da Q(<u>C</u> 1 ult. RP MSD Result 240	te Ana C Prepa MS Result 243 D is ba	lyzed: aration: Unit. mg/K ased on th its Dil. Kg 1	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike Amount 250	Sp Amo 25 I spike Mat Resu 16.	ike 50 duplicat rix 1lt Re 8 89	Matri: Result 16.8 e resu c. 36	Anal Prep x t Rec. 90 lt. Rec. Limit .1 - 147.2	yzed By ared By I 36.1 RPD 1	r: AG r: AG Rec. .imit - 147.2 RPD Limit 20
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the	ed Sa e spike F e spike	F e res C 1 e res	e: 29994 Da QC <u>t</u> ult. RP MSD Result 240 ult. RP	te Ana C Prepa MS Result 243 D is ba Un mg/ D is ba	lyzed: aration: Unit mg/K ased on th its Dil. <u>'Kg 1</u> ased on th	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike Amount 250 e spike and	Sp Amo 25 I spike Mat Resu 16. I spike	ike bunt duplicat rix alt Rea 8 89 duplicat	Matri: Result 16.8 e resu 2. 36 e resu	Anal Prep x t Rec. 90 lt. Rec. Limit i.1 - 147.2 lt.	yzed By ared By I <u>I</u> 36.1 RPD 1	r: AG r: AG Rec. imit - 147.2 RPD Limit 20
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the	e spike F spike	$\frac{F}{c}$	e: 29994 Da Q(<u>C</u> <u>1</u> ult. RP MSD Result 240 ult. RP	16 te Ana C Prepa MS Result 243 D is ba Un mg/ D is ba iD	lyzed: aration: Unit mg/K ased on th its Dil. <u>'Kg 1</u> ased on th	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike Amount 250 e spike and	Sp Amo 25 I spike Mat Resu 16. I spike Spil	ike 50 duplicat rix 11 Re 8 89 duplicat ce	Matri: Result 16.8 e resu 2. 36 e resu MS	Anal Prep x t Rec. lt. Rec. Limit i.1 - 147.2 lt. MSD	yzed By ared By I 36.1 RPD 1	r: AG r: AG Rec. <u>imit</u> <u>- 147.2</u> RPD <u>Limit</u> <u>20</u> Rec.
Matrix Spike (MS-1) Spik QC Batch: 91976 Prep Batch: 78030 Param DRO Percent recovery is based on the Param DRO Percent recovery is based on the Surrogate	e spike F e spike M Res	F 	e: 29994 Da QC <u>C</u> ult. RP MSD Result 240 ult. RP MS Res	16 te Ana Derepa MS Result 243 D is ba Un mg/ D is ba iD ult	lyzed: aration: Unit mg/K ased on th its Dil. <u>'Kg 1</u> ased on th Units	2012-06-09 2012-06-09 s Dil. g 1 e spike and Spike Amount 250 e spike and Dil.	Sp. Amo 25 I spike Mat: Resu 16. I spike Spil Amou	ike 50 duplicat rix alt Re 8 89 duplicat ce unt	Matri: Result 16.8 e resu 36 e resu MS Rec.	Anal Prep x t Rec. lt. Rec. Limit i.1 - 147.2 lt. MSD Rec.	yzed By ared By I 36.1 RPD 1	r: AG : AG Rec. imit - 147.2 RPD Limit 20 Rec. imit

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Calibration Standards

Standard (CCV-2)

QC Batch:	91895			Date Ana	Analyzed By: AG				
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.0987	99	80 - 120	2012-06-06
Toluene			1	mg/kg	0.100	0.0937	94	80 - 120	2012-06-06
Ethylbenzer	ne		1	mg/kg	0.100	0.0851	85	80 - 120	2012-06-06
Xylene			1	mg/kg	0.300 0.243		81	80 - 120	2012-06-06

Standard (CCV-3)

QC Batch: 91895				Date Ana	alyzed: 201	Analyzed By: AG			
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.102	102	80 - 120	2012-06-06
Toluene			1	mg/kg	0.100	0.103	103	80 - 120	2012-06-06
Ethylbenzer	ne		1	mg/kg	0.100	0.104	104	80 - 120	2012-06-06
Xylene			1	mg/kg	0.300	0.322	107	80 - 120	2012-06-06

Standard (CCV-2)

- - -

QC Batch:	91950			Date .	Analyzed:	2012-06-07		Analyzed By: AG		
					CCVs	CCVs Found	CCVs Democrat	Percent	Data	
					Irue	Found	Percent	Recovery	Date	
Param	F	lag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
DRO			1	mg/Kg	250	242	97	80 - 120	2012-06-07	

Standard (CCV-3)

QC Batch: 91950

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Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	223	89	80 - 120	2012-06-07
Standard (CC	V-2)							
QC Batch: 919	952		Date .	Analyzed:	2012-06-07		Analy	zed By: AG
D			T T 1	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units mg/Kg	<u> </u>	<u> </u>	100	$\frac{\text{Limits}}{80 - 120}$	Analyzed 2012-06-07
DRO Standard (CC	V-3)	1	ing/ Kg					
DRO Standard (CC QC Batch: 919	V-3) 952	1	Date A	Analyzed:	2012-06-07		Analy	zed By: AG
DRO Standard (CC QC Batch: 919	V-3) 952	1	Date A	Analyzed: CCVs True	2012-06-07 CCVs Found	CCVs Percent	Analy Percent Recovery	zed By: AG Date
DRO Standard (CC QC Batch: 919 Param	V-3) 952 Flag	ı	Date J Units	Analyzed: CCVs True Conc.	2012-06-07 CCVs Found Conc.	CCVs Percent Recovery	Analy Percent Recovery Limits	zed By: AG Date Analyzed
DRO Standard (CC QC Batch: 919 Param DRO	P V-3) 952 Flag	1 Cert	Date A Units mg/Kg	Analyzed: CCVs True Conc. 250	2012-06-07 CCVs Found Conc. 244	CCVs Percent Recovery 98	Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-07
DRO Standard (CC QC Batch: 919 Param DRO	V-3) 952 Flag	Cert	Date J Units mg/Kg	Analyzed: CCVs True Conc. 250	2012-06-07 CCVs Found Conc. 244	CCVs Percent Recovery 98	Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-07
DRO Standard (CC QC Batch: 919 Param DRO Standard (CC	V-3) 952 Flag V-1)	Cert	Date A Units mg/Kg	Analyzed: CCVs True Conc. 250	2012-06-07 CCVs Found Conc. 244	CCVs Percent Recovery 98	Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-07
DRO Standard (CC QC Batch: 919 Param DRO Standard (CC QC Batch: 919	PV-3) 152 Flag PV-1) 156	Cert	Date A Units mg/Kg Date A	Analyzed: CCVs True Conc. 250 Analyzed:	2012-06-07 CCVs Found Conc. 244 2012-06-06	CCVs Percent Recovery 98	Analy Percent Recovery Limits 80 - 120 Analy	zed By: AG Date Analyzed 2012-06-07 zed By: AR
DRO Standard (CC QC Batch: 919 Param DRO Standard (CC QC Batch: 919	V-3) 952 Flag V-1) 956	Cert 1	Date A Units mg/Kg Date A	Analyzed: CCVs True Conc. 250 Analyzed: CCVs True	2012-06-07 CCVs Found Conc. 244 2012-06-06 CCVs Found	CCVs Percent Recovery 98 CCVs Percent	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery	zed By: AG Date Analyzed 2012-06-07 zed By: AR Date
DRO Standard (CC QC Batch: 919 Param DRO Standard (CC QC Batch: 919 Param	PV-3) 152 Flag PV-1) 156 Flag	Cert 1 Cert	Units Date A Units mg/Kg Date A Units	Analyzed: CCVs True Conc. 250 Analyzed: CCVs True Conc.	2012-06-07 CCVs Found Conc. 244 2012-06-06 CCVs Found Conc.	CCVs Percent Recovery 98 CCVs Percent Recovery	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery Limits	zed By: AG Date Analyzed 2012-06-07 zed By: AR Date Analyzed

Standard (CCV-2)

QC Batch: 91956

Date Analyzed: 2012-06-06

Analyzed By: AR

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Param	Flag	Cort	Units	CCVs True Conc	CCVs Found Conc	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride	1 1.6g	Cert	mg/Kg	100	100	100	85 - 115 2012-06-0	

Standard (CCV-1)

QC Batch:	91972			Analyzed By: AG					
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene			1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Toluene			1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Ethylbenzer	ne		1	mg/kg	0.100	0.100	100	80 - 120	2012-06-08
Xylene			1	mg/kg	0.300	0.306	102	80 - 120	2012-06-08

Standard (CCV-2)

QC Batch:	91972			Analyzed By: AG						
					CCVs CCVs		CCVs	Percent		
					True	Found	Percent	Recovery	Date	
Param		\mathbf{Flag}	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene			1	mg/kg	0.100	0.0959	96	80 - 120	2012-06-08	
Toluene			1	mg/kg	0.100	0.0925	92	80 - 120	2012-06-08	
Ethylbenzer	ie		1	mg/kg	0.100	0.0911	91	80 - 120	2012-06-08	
Xylene			1	mg/kg	0.300	0.270	90	80 - 120	2012-06-08	

Standard (CCV-3)

QC Batch:	91972			Analyzed By: AG						
					CCVs	CCVs	CCVs	Percent		
					True	Found	Percent	Recovery	Date	
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene			1	mg/kg	0.100	0.0906	91	80 - 120	2012-06-08	
Toluene			1	mg/kg	0.100	0.0882	88	80 - 120	2012-06-08	
Ethylbenzer	ie	1		mg/kg	0.100	0.0854	85	80 - 120	2012-06-08	
Xylene			1	mg/kg	0.300	0.253	84	80 - 120	2012-06-08	

114-640141	te: June 11 .1	1, 2012		N COG/Dia	Work Ord	attery	Page Number: 36 of 39 Eddy Co., NM		
Standard	(CCV-1)								
QC Batch:	91973			Date A	nalyzed:	2012-06-08		Analy	zed By: AG
Param	F	lag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRU			1	mg/Kg		0.824	82	80 - 120	2012-06-08
Standard	(CCV-2)								
QC Batch:	91973			Date A	nalyzed:	2012-06-08		Analy	zed By: AG
					CCVs	CCVs	CCVs	Percent	
					True	Found	Percent	Recovery	Date
Param	F	lag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO			1	mg/Kg	1.00	0.813	81	80 - 120	2012-06-08
~~~~~							<u>, , , , , , , , , , , , , , , , , , , </u>	·····	
Standard QC Batch:	( <b>CCV-3</b> ) 91973			Date A	nalyzed:	2012-06-08		Analy	zed By: AG
Standard QC Batch:	( <b>CCV-3</b> ) 91973			Date A	nalyzed: CCVs	2012-06-08 CCVs	CCVs	Analy Percent	zed By: AG
Standard QC Batch:	(CCV-3) 91973			Date A	nalyzed: CCVs True	2012-06-08 CCVs Found	CCVs Percent	Analy Percent Recovery	zed By: AG
Standard QC Batch: Param	( <b>CCV-3</b> ) 91973 F	lag	Cert	Date A Units	nalyzed: CCVs True Conc.	2012-06-08 CCVs Found Conc.	CCVs Percent Recovery	Analy Percent Recovery Limits	zed By: AG Date Analyzed
Standard QC Batch: Param GRO	( <b>CCV-3</b> ) 91973 F	lag	Cert	Date A Units mg/Kg	nalyzed: CCVs True Conc. 1.00	2012-06-08 CCVs Found Conc. 0.813	CCVs Percent Recovery 81	Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-08
Standard QC Batch: Param GRO Standard	(CCV-3) 91973 F (CCV-1)	lag	Cert	Date A Units mg/Kg	nalyzed: CCVs True Conc. 1.00	2012-06-08 CCVs Found Conc. 0.813	CCVs Percent Recovery 81	Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-08
Standard QC Batch: Param GRO . Standard QC Batch:	(CCV-3) 91973 F (CCV-1) 91974	lag	Cert	Date A Units mg/Kg Date A	nalyzed: CCVs True Conc. 1.00 nalyzed:	2012-06-08 CCVs Found Conc. 0.813 2012-06-09	CCVs Percent Recovery 81	Analy Percent Recovery Limits 80 - 120 Analy	zed By: AG Date Analyzed 2012-06-08 zed By: AG
Standard QC Batch: Param GRO Standard QC Batch:	(CCV-3) 91973 F (CCV-1) 91974	lag	Cert 1	Date A Units mg/Kg Date A	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs	CCVs Percent Recovery 81 CCVs	Analy Percent Recovery Limits 80 - 120 Analy Percent	zed By: AG Date Analyzed 2012-06-08 zed By: AG
Standard QC Batch: Param GRO Standard QC Batch:	(CCV-3) 91973 F (CCV-1) 91974	lag	Cert 1	Date A Units mg/Kg Date A	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV True	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs Found	CCVs Percent Recovery 81 CCVs Percent	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery	zed By: AG Date Analyzed 2012-06-08 zed By: AG Date
Standard QC Batch: Param GRO Standard QC Batch: Param	(CCV-3) 91973 F (CCV-1) 91974	lag Flag	Cert 1	Date A Units mg/Kg Date A Units	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV True Conc	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs s Found c. Conc.	CCVs Percent Recovery 81 CCVs Percent Recovery	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery Limits	zed By: AG Date Analyzed 2012-06-08 zed By: AG Date Analyzed
Standard QC Batch: Param GRO Standard QC Batch: Param Benzene	(CCV-3) 91973 F (CCV-1) 91974	lag Flag	Cert 1 5 Cert	Date A Units mg/Kg Date A Units mg/kg	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV True Conc 0.10	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs Found c. Conc. 0 0.0916	CCVs Percent Recovery 81 CCVs Percent Recovery 92	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery Limits 80 - 120	zed By: AG Date Analyzed 2012-06-08 zed By: AG Date Analyzed 2012-06-09
Standard QC Batch: Param GRO Standard QC Batch: Param Benzene Toluene	(CCV-3) 91973 F (CCV-1) 91974	lag Flag	Cert 1 ; Cert 1 1	Date A Units mg/Kg Date A Units mg/kg mg/kg	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV True Conc 0.100 0.100	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs Found c Conc. 0.0916 0.0.0904	CCVs Percent Recovery 81 CCVs Percent Recovery 92 90	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery Limits 80 - 120 80 - 120	zed By: AG Date Analyzed 2012-06-08 zed By: AG Date Analyzed 2012-06-09 2012-06-09
Standard QC Batch: Param GRO Standard QC Batch: Param Benzene Toluene Ethylbenzer	(CCV-3) 91973 F (CCV-1) 91974	lag Flag	Cert 1 ; Cert 1 1 1	Date A Units mg/Kg Date A Units mg/kg mg/kg	nalyzed: CCVs True Conc. 1.00 nalyzed: CCV True Conc 0.100 0.100 0.100	2012-06-08 CCVs Found Conc. 0.813 2012-06-09 s CCVs s CCVs s Found c. Conc. 0.0916 0.0904 0.0905	CCVs Percent Recovery 81 CCVs Percent Recovery 92 90 90	Analy Percent Recovery Limits 80 - 120 Analy Percent Recovery Limits 80 - 120 80 - 120 80 - 120	zed By: AG Date Analyzed 2012-06-08 zed By: AG Date Analyzed 2012-06-09 2012-06-09 2012-06-09

Report Date: June 11, 114-6401411	···	Work Order: 12060446 COG/Diamondback State Tank Battery					mber: 37 of 39 Eddy Co., NM	
Standard (CCV-2)								
QC Batch: 91974			Date Ana	alyzed: 201	2-06-09		Analy	zed By: AG
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	$\operatorname{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Benzene		1	mg/kg	0.100	0.0971	97	80 - 120	2012-06-09
Toluene		mg/kg = 0.100 = 0.0048 = 95					80 - 120	2012-06-09
Ethylbenzene	1 mg/kg 0.100 0.0918 92				92	80 - 120	2012-06-09	
Xylene	1	mg/kg	0.300	0.268	89	80 - 120	2012-06-09	

# Standard (CCV-1)

QC Batch:	91975	91975			Analyzed:	2012-06-09		Analyzed By: AG		
					CCVs	CCVs	CCVs	Percent		
					True	Found	Percent	Recovery	Date	
Param	F	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO			1	mg/Kg	1.00	0.962	96	80 - 120	2012-06-09	

#### Standard (CCV-2)

QC Batch:	91975			Date	Analyzed:	2012-06-09		Analy	zed By: AG
					CCVs	CCVs	CCVs Demost	Percent	Data
					Irue	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO			1	mg/Kg	1.00	0.951	95	80 - 120	2012-06-09

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#### Standard (CCV-1)

QC Batch:	91976			Date	Analyzed:	2012-06-09		Analy	zed By: AG
					CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Fl	lag	$\mathbf{Cert}$	Units	Conc.	Conc.	Recovery	Limits	Analyzed
DRO			1	mg/Kg	250	263	105	80 - 120	2012-06-09

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Standard	(CCV-2)											
QC Batch:	91976	Date	Analyzed:	2012-06-09		Analyzed By:						
				CCVs	CCVs	CCVs	Percent					
				True	Found	Percent	Recovery	Date				
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed				
DRO		1	mg/Kg	250	256	102	80 - 120	2012-06-09				

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## Appendix

#### **Report Definitions**

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

#### Laboratory Certifications

	Certifying	Certification	Laboratory
$\mathbf{C}$	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-11-3	Midland

#### **Standard Flags**

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

#### Attachments

The scanned attachments will follow this page.

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

		1206	04	f4 <b>e</b>																					
Analysis Request of Chain of Custody Record							T	PAGE: / OF: /																	
							(Circle or Specify Method No.)																		
					<b>TETRATECH</b> 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946						5 (Ext. to C35)	d Cr Pb Hg Se	d Vr Pd Hg Se									TDS			
	ME:				SITE MANAGER:	ERS	PRESERVATIVE				1X10	BaC	Ba C			0/624	70/625					s, pH,			
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