HOBBS OCD 4837 District I State of New Mexico Energy Minerals and Natural Resources MAR 1 9 2012 1625 N. French Dr., Hobbs, NM 88240 Form C-141 District II Revised October 10, 2003 1301 W. Grand Avenue, Artesia, NM 88210 Submit 2 Copies to appropriate District Office in accordance District III **Oil Conservation Division** 1000 Rio Brazos Road, Aztec, NM 87410 1220 South St. Francis Dr. District IV with Rule 116 on back RECEIVED 1220 S. St. Francis Dr., Santa Fe, NM 87505 side of form Santa Fe, NM 87505 **Release Notification and Corrective Action OPERATOR** Initial Report 🛛 Final Report Name of Company SM Energy Company Contact Donna Huddleston Address 3300 N "A" St Bldg. 7-200 Midland, Tx 79705 Telephone No. (432) 688-1789 Facility Type Tank Battery Facility Name Inca 1 Battery Mineral Owner: BLM Surface Owner: BLM Lease No. 30-025-29887 LOCATION OF RELEASE Feet from the North/South Line Feet from the Section Township Range East/West Line County Unit Letter 32Ē D 19 18S Lea County Latitude N 32.73786° Longitude W 103.81388 ° NATURE OF RELEASE Type of Release: Produced Water Volume of Release 50 bbis Volume Recovered 0 bbls Source of Release: 3.0" polyethylene transition Date and Hour of Occurrence Date and Hour of Discovery 09/23/2009 @ 8:30 am 09/23/2009 @ 8:30 am If YES, To Whom? Was Immediate Notice Given? Yes 🗌 No 🗍 Not Required Trish Badbear with BLM and Maxie Brown with NMOCD By Whom? Bill Hearne Date and Hour 09/23/2009 3:36 p.m. Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. 🗌 Yes 🖾 No N/A If a Watercourse was Impacted, Describe Fully.\* N/A Describe Cause of Problem and Remedial Action Taken.\* Located leak in 3.0" OD polyethylene transition (due to internal corrosion) in saltwater transfer line at the Inca Federal #1 to ESDU injection station. Shut off SW transfer pump. Cut both 3.0" polyethylene transitions and 3.0" butterfly valve. Welded polyethylene line back together and returned line to service. Describe Area Affected and Cleanup Action Taken.\* Tetra Tech inspected site and collected samples to define spills extent. Soil within the spill area was excavated to a depth of 10 feet below surface grade and hauled away for proper disposal. Site was brought up to four feet below surface grade and lined with a 40 mil liner. The site was then backfilled with clean material to surface grade and seeded with BLM seed mix. Tetra Tech prepared closure report and submitted to NMOCD for review. I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations. OIL CONSERVATION DIVISION Signature: Approved by District Supervisor: Printed Name: Aaron Hale (agent for SM Energy) Approval Date: Expiration Date: Title: Project Manager Conditions of Approval: E-mail Address: aaron.hale@tetratech.com Attached Phone: (432) 682-4559 Date:

PJXK1535233738

Attach Additional Sheets If Necessary

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District 1 1625 N French District 11	Dr, Hobbs,	NM 8824	CEI		tate of inerals	New Mex and Natura	ico I Resources		F Revised Oct	orm C-141 ober 10, 2003
1301 W Grand District III	Avenue, Art	esia, NM 88210	5028	7009 Oil 0	Conser	vation Div	vision		Submit 2 Copies to	appropriate
District IV	s Road, Azic	C. NM 87410 C		OCD 1220	) South	1 St. Franc	is Dr.		with Rule	116 on back
12205 St Fram		a re, NM appay	1000	Sa Sa	anta Fo	e, NM 875	05			side of torm
			Rel	ease Notific	catio	n and Co	rrective A	ction		
						OPERA'	ror	🕺 Initi	al Report 📃	Final Repor
Address	DIMPANY St.	Mary Land Street Bldg	<u>&amp; Exploi</u> 7 Ste 2	ration Co. 00 Midland T	x +	Contact Dor Telephone 1	ina Huddleston	780		
Facility Na	me Inca 1	Battery	. 7, 010. 2			Facility Typ	e Battery			
Surface Ow	mer BLM			Mineral (	Owner B	BLM	· · ·	Lease	No.	
				TOC	ATIO		FACÉ	E.SHUGART DE	25.29487	<u></u>
Unit Letter	Section	Township	Range	Feet from the	North	South Line	Feet from the	East/West Line	County	00 00
D	19	18S	32E				• •		Lea County	
L	[	<u> </u>	L	<u>!</u>	<u>i</u>			l	<u> </u>	
			La	titude		Longitud	e			
			<u> </u>	NAT	<b>FURE</b>	OF RELI	EASE			
Type of Rele Source of Re	ase Prod V	Water	transitio			Date and H	Release 50 bbls	Volume Volume	Recovered 0 bbls Hour of Discovery 8	-30AM
Was Immedi	Was Immediate Notice Given?					If YES, To	Whom?		······································	
	By Whom? Bill Hearne					Trish Bad	bear W/ BLM a	& Maxie Brown	w/ NMOCD	<u> </u>
Was a Water	Bill Heam course Rea	ched?		· · · · · · · · · · · · · · · · · · ·		If YES. Vo	our 9/23/09_3	36PM	· · · · · · · · · · · · · · · · · · ·	
If a Watercourse was Impacted, Describe Fully.*										
	•		· · · ·	•			•			•
Mar Dan - C										
Describe Cause of Problem and Remedial Action Taken.*										
Located leak in 3.0" OD polyethylene transisition ( due to internal corrosion ) in saltwater transfer line f/ Inca Federal # 1 Battery to ESDU										
Shut off SV and returne	ation. V transfer   d line to se	pump. Cut or ervice.	ut both 3.	0" polyethylene	transisi	itions and 3.0	" butterfly valv	ve. Weided polye	thylene line back t	ogether
Describe Are	a Affected	and Cleanup	Action Tal	ken.*			, , ,	•		· · ·
Spill Area:	35' x 95' =	• 3325 sq. ft.	Estimat	ed 50 produced	water s	pilled. Non	e recovered.		· ·	• •
Notified Te	etra-Tech to	o remediate :	spill area.	•		,			· · · ·	•
I hereby cert regulations a public health should their or the enviro federal, state	ify that the ill operators or the envi operations h nment. In a , or local la	information g are required t ronment. The have failed to addition, NMC ws and/or reg	iven above o report and acceptance adequately OCD accept ulations.	e is true and comp nd/or file certain r ce of a C-141 report v investigate and r otance of a C-141	elete to ti release no ort by the remediate report de	he best of my otifications an a NMOCD ma a contamination oes not relieve	knowledge and u d perform correc arked as "Final R on that pose a thre the operator of r	nderstand that pur tive actions for rele eport" does not rele eat to ground water esponsibility for c	suant to NMOCD rule eases which may end ieve the operator of li r, surface water, hum ompliance with any o	es and anger ability an health other
Signature	lown	wdh	idd	leston			OIL CONS	SERVATION	DIVISION	
Printed Name	e:Donna H	uddleston		• .	<u> </u>	Approved by i	District Supervise	" Steaffre	-Labring	·
Title: Prod	luction Tex	:h			·   ·	Approval Date	ः०१/२१/०१	Expiration	Date: 11 30 09	
E-mail Addr	ess: dhuddl	eston@stmai	yland.co	<u>m</u>		Conditions of	Approval: Delin FINAL C-	EATE TO CLEW	Attached	· ,
Date: 09/24/	2009	 	Phone:	(432)688-1789			· · ·		1RP-09-10-2	302
Attach Addi	tional She	ets If Necess	ary			-				

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#### SITE INFORMATION

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The states

		Repo	ort Type: Wo	ork Plan
General Site Info	rmation:			
Site:		Inca #1 Tank E	Battery ·	RECEIVED
Company:		SM Energy Co	mpany	
Section, Townsh	ip and Range	Section 19, T1	8S, R32E	Unit Letter - D
Lease Number:				
County:		Lea County		
GPS:		32.73774° N, 1	03.81370° W	
Surface Owner:		Federal		
Mineral Owner:				
Directions:		From the intersed miles. Turn to th road ends. Turn Federal Injection travel 0.4 miles.	ction of Hwy 82 and e Southeast on a ca onto the road to the Station. Take the c Turn east on calich	Shugart Rd (Loco Hills), go south on Shugart Rd exactly 4 aliche road and travel southeast for another 4 miles until the a northeast and travel approximatly 1.1 miles to the Geronimo caliche road on the east side of the station to the north east and e road and travel 0.15 miles to the location.
Release Data:				· ·
Date Released:		9/23/2009	· · · · · · · · · · · · · · · · · · ·	
Type Release:		Produced Wate	er	
Source of Contam	nination:	3" Polyethylene	e transition	
Fluid Released:		50 bbls		
Fluids Recovered	•	0 bbls		
Official Commun	ication:	-		
Name:	Chad McNeely			Aaron Hale
Company:	SM Energy Compa	nv		Tetra Tech
Addross:	2200 NLA St # 7 20	0		1010 N. Big Spring
	3300 N A St # 7-200			
P.O. Box				· · · · · · · · · · · · · · · · · · ·
City:	Midland, Texas			Midland, Texas
Phone number:	(432) 688-3124			· (432) 682-4559
Fax:				
Email:	cmcneely@sm-er	nergy.com		aaron.hale@tetratech.com
Ranking Criteria				
Depth to Groundwa	ater:		Ranking Score	Site Data
<50 ft			20	
50-99 ft			10	
>100 π.			0	. U
WellHead Protectic	<i></i>		Ranking Score	Site Data
Nater Source <1,00	 00 ft., Private <200 ft		20	
Nater Source >1,00	00 ft., Private >200 ft		0	0
Surface Body of W	ater:		Ranking Score	Site Data
<200 ft.			20	
200 π - 1,000 π.				· · · · · · · · · · · · · · · · · · ·
1,000 N.				
То	tal Ranking Score		0	GW912301
		Acceptat Benzene 10	ble Soil RRAL (m Total BTEX 50	g/kg) TPH 5,000 Steeffrey Servis MMCCD-HOBBS

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## TETRA TECH

May 5, 2011

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

#### Re: Work Plan for the SM Energy Company Inca #1 Tank Battery, Polyethylene Saltwater Transfer Line Release Unit D, Section 19, Township 18 South, Range 32 East Lea County, New Mexico. (1RP- 09.10.2302)

#### Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by SM Energy Company (SM Energy) to assess a polyethylene saltwater transfer line release at the Inca #1 Tank Battery located in Unit D, Section 19, Township 18 South, Range 32 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.73774°, W 103.81370°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 17, 2008. Approximately 50 barrels of produced water were released from a 3-inch poly line. No free fluids were recovered. The 3-inch poly line was repaired with new connections. The initial C-141 is enclosed in Appendix A.

#### Hydrology

The New Mexico Office of the State Engineers (OSE) Website listed two water wells within 2 miles of the site. The closest well (identified by the OSE as CP 00896) did not have any information available. The second closest well (identified by the OSE as CP 00672) had a total depth of 540 feet and a depth to water of 460 feet. The Geology and Groundwater Conditions in Southern Lea County New Mexico (Report 6) showed one well Section 19 of Township 18 South and Range 33 East, with a reported depth to water of greater than 140 feet below ground surface (bgs). The New Mexico Oil Conservation Division (OCD) regional groundwater gradient map for Lea County shows the depth to groundwater in this section at approximately 225 to 250 feet bgs.

According to the Geology and Groundwater Conditions in Southern Lea County New Mexico (Report 6), the Santa Rosa Sandstone (Dockum Group) is present in the Western third of Lea County. The Santa Rosa Sandstone consists of fine to coarse grain sands with minor shale layers generally red in coloration.

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On March 11, 2009, Tetra Tech advanced 3 soil borings (BH-1, BH-2 and BH-3) to assess the current chloride concentrations at varying depths at the Site. BH-1 and BH-3 were advanced to 60 feet below ground surface (bgs) while BH-2 was advanced to 50 feet bgs. During the soil boring program, groundwater was not encountered.

#### Regulatory

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

#### **Soil Assessment and Results**

On October 5, 2009, Tetra Tech personnel collected soils samples from up to 6.5 feet bgs utilizing a hand auger at three locations within the spill area. The spill area measures approximately 60 feet by 120 feet. Soil sampling stopped in each location when auger refusal occurred. Soil samples were submitted for laboratory analysis of TPH by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The laboratory analytical data indicated that the soil samples did not have BTEX or TPH concentrations above their detection limits. Chloride concentrations did however exceed 1,000 mg/kg.

On November 3, 2009, Tetra Tech personnel remobilized to the site with a drilling rig to advance soil borings in the areas previously assessed with a hand auger. Three borings identified as BH-1, BH-2 and BH-3 were advanced to depths of 60 feet, 50 feet and 60 feet, respectively. Soil samples from the borings were submitted for laboratory analysis to evaluate the chloride concentration. The bottom sample in each boring did not exhibit chloride concentrations above the laboratory detection limits.

Referring to Table 1, all of the samples analyzed were below the RRAL for both BTEX and TPH. Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extending to 50' (BH-1), 40' (BH-2) and 50' (BH-3). All sample locations had chloride concentrations that decreased with depth. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The borehole locations are shown on Figure 3.

#### Work Plan

The areas of BH-1, BH-2 and BH-3 are proposed to be excavated to a depth of approximately 10 feet bgs. This area will be backfilled with clean soil to a depth of approximately 4 feet bgs, where the 40 mil liner will be placed. Excavated soils will be transported under manifest to Lea Land, Inc.'s Landfill in Eddy County.

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The soil borings advanced at this site indicate the presence of poorly consolidated sands in the subsurface. These sands may make the excavation of soils to 10 feet bgs unsafe to site workers and equipment as well as potentially damaging the foundations of the adjacent lease road, valve box and tank battery should the sand begin to slough off into the excavation. Should this happen, the excavation activities will stop and the excavation will be backfilled and lined as previously planned. The OCD will be notified if the safe excavation of soils to 10 feet is not possible.

Once the remedial activities are performed a closure report will be submitted for the soils at the site. If you require any additional information or have any questions or comments concerning this work plan, please call at (432) 682-4559.

Respectfully submitted, **TETRA TECH, INC.** 

Aaron M. Hale Senior Project Manager

cc: Chad McNeely – SM Energy Company Don Riggs – SM Energy Company Mark Bondy – SM Energy Company BLM – Jim Amos

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### TABLES

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Table 1 SM Energy Company Inca 1 Tank Battery

# Inca 1 Tank Battery Section 19, Township 18 South, Range 32 East LEA COUNTY, NEW MEXICO

Sample	Date	Sample	SollS	tatus		TPH (mg/kg)		Benzene	Toluene	Ethlybenzene	Xylene	Chloride
₽	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-1	10/5/2009	0-1	×		<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	2,060
		1-1.5	×			۱	ı	•	•		1	2,070
		2-2.5	×		,		Ţ	-	•	•	•	5,760
		3-3.5	×		•	1	ŀ	•	•	-		10,900
		4-4.5	×		1	ŀ	•	1	F	•		11,100
		5-5.5	×		1	I	-	•	-	+		19,700
		6-6.5	×		•	1	-	•	-	1		27,400
BH-1	11/3/2009	8-9	×		•	1	•		1	1	•	25,000
		10-11	×			1	1	•	•	1	ı	13,500
		15-16	×				I	•	•	•	I	11,300
		20-21	×			•	1	1	•	•	-	16,500
		25-26	×		'	•	ı	-	•	•	•	14,000
		30-31	×		'		•	1	ł	•	•	11,000
		40-40	×		,	1	•	1	1	1	-	7,120
		50-51	×			ı	•	•	•	•	-	2,660
		60-61	×			1	1	•	•		I	<200 `
												-
										-		
AH-2	10/5/2009	0-1	×		<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	4,530
		1-1.5	×	1	•	I	•	•	1	1	•	4,930
		2-2.5	×		•	1	F		•	1	1	8,060
		3-3.5	×		-	r	,		t	ŀ		12,800
		4-4.5	×		,	ı	ı	,	•	•	1	12,200
		5-5.5	×		,	,	1	,	•	-	•	16,000
		6-6.5	×		'	1	1	,	•	,		23,400
Í												
BH-2	11/3/2009	10-11	×			1	-	ı		1	'	13,100
		15-16	×		1	,	'	•	,	,		18,600
		20-21	×		'		'	1	'	,		17,800
		30-31	×		-	1		1		ı	•	12,200
Ī		40-40	×		'	•	•	1	1	'	•	11,300
		50-51	×		,	•	•	1	1	ı		<200
							_					

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( - ) not analyzed

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# Table 1 SM Energy Company Inca 1 Tank Battery

Chloride	(mg/kg)	4,230	10,100	6,930	10,200	11,400	29,200	-	15,600	15,700	15,000	14,500	11,600	3,780	<200	
Xylene	(mg/kg)	<0.01	•	•		•	•		•	•	-	1	-	•	•	
Ethlybenzene	(mg/kg)	<0.01	•	-		-	-		•	-	I	•		-	-	
Toluene	(mg/kg)	<0.01			+	r			-	1					\$	
Benzene	(mg/kg)	<0.01		•	-	ı	1		-	,	•	•	•	,	1	
	Total	52.0		-	-	•	•				-	•		-	-	
TPH (mg/kg)	GRO	<1.0	I		•		•			•	t	I	-	1	,	
	DRO	 52.0	•	•	•	•	•		,	,	'	1	•	•	•	
tatus	Removed															
Soil S	In-Situ	×	×	×	×	×	×		×	×	×	×	Х	х	X	
Sample	Depth (ft)	0-1	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5		10-11	15-16	20-21	30-31	40-40	50-51	60-61	
Date	Sampled	10/5/2009							11/3/2009							
Sample	ē	AH-3							BH-3							

(-) Not Analyzed

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#### **Summary Report**

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

#### Report Date: October 12, 2009

Work Order: 9100524

Project Location:Lea Co., NMProject Name:St. Mary/Inca 1 TBProject Number:114-6400305

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
211596	AH-1 0-1'	soil	2009-10-05	00:00	2009-10-05
211597	AH-1 1-1.5'	soil	2009-10-05	00:00	2009-10-05
211598	AH-1 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211599	AH-1 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211600	AH-1 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211601	AH-1 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211602	AH-1 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211603	AH-2 0-1'	soil	2009-10-05	00:00	2009-10-05
211604	AH-2 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211605	AH-2 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211606	AH-2 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211607	AH-2 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211608	AH-2 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211609	AH-2 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211610	AH-3 0-1'	soil	2009-10-05	00:00	2009-10-05
211611	AH-3 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211612	AH-3 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211613	AH-3 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211614	AH-3 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211615	AH-3 5'-5.5'	soil	2009-10-05	00:00	2009-10-05

			BTEX		TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
211596 - AH-1 0-1'	< 0.0100	<0.0100	< 0.0100	< 0.0100	<50.0	<1.00
211603 - AH-2 0-1'	< 0.0100	< 0.0100	< 0.0100	<0.0100	< 50.0	<1.00
211610 - AH-3 0-1'	< 0.0100	< 0.0100	< 0.0100	< 0.0100	52.0	<1.00

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data. .

Report Date: Octo	ber 12, 2009	Work Order: 9100524	Page	Number: 2 of 4
Sample: 211596	- AH-1 0-1'			
Param	Flag	Result	Units	RL
Chloride		2060	mg/Kg	4.00
Sample: 211597	- AH-1 1-1.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		2070	mg/Kg	4.00
Sample: 211598	- AH-1 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		5760	mg/Kg	4.00
Sample: 211599	- AH-1 3'-3.5'			
Param	Flag	Result	Units	· RL
Chloride		10900	mg/Kg	4.00
Sample: 211600	- AH-1 4'-4.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		11100	mg/Kg	4.00
Sample: 211601	- AH-1 5'-5.5'			
Param	Flag	Result	Units	RL
Chloride		19700	mg/Kg	4.00
Sample: 211602	- AH-1 6'-6.5'			
Param	Flag	Result	$\mathbf{Units}$	$\mathbf{RL}$
Chloride		27400	mg/Kg	4.00
Sample: 211603	- AH-2 0-1'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		4530	mg/Kg	4.00

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Report Date: Octo	ber 12, 2009	Work Order: 9100524	Page	Number: 3 of 4
Sample: 211604	- AH-2 1'-1.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		4930	mg/Kg	4.00
Sample: 211605	- AH-2 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		8060	mg/Kg	4.00
Sample: 211606	- AH-2 3'-3.5'			
Param	Flag	Result	Units	RL
Chloride	· · · · · · · · · · · · · · · · · · ·	12800	mg/Kg	4.00
Sample: 211607	- AH-2 4'-4.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		12200	mg/Kg	4.00
Sample: 211608	- AH-2 5'-5.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		16000	mg/Kg	4.00
Sample: 211609	- AH-2 6'-6.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		23400	mg/Kg	4.00
Sample: 211610	- AH-3 0-1'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		. 4230	mg/Kg	4.00
Sample: 211611	- AH-3 1'-1.5'			
Param	Flag	Result	Units	RL
Chloride	····	10100	mg/Kg	4.00

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TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

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Report Date: Octo	bber 12, 2009	Work Order: 9100524		Page Number: 4 of 4
Sample: 211612	- AH-3 2'-2.5'			
Param	Flag	Result	Units	RL
Chloride		6930	mg/Kg	4.00
Sample: 211613	- AH-3 3'-3.5'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		10200	mg/Kg	4.00
Sample: 211614	- AH-3 4'-4.5'			
Param	Flag	Result	Units	RL
Chloride		11400	mg/Kg	. 4.00
Sample: 211615	- AH-3 5'-5.5'			
Param	Flag	Result	Units	RL
Chloride		29200	mg/Kg	4.00

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mg/Kg

4.00

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5701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 300+37B+1296 306+794+1296 FAX 806+794+1298 El Paso, Texas 79922 200 East Sunset Road, Suite E 888-588-3443 FAX-915+585+4944 915+585+3443 5002 Basin Street, Suite A1 Midland, Texas 79703 432 689 6301 FAX 432+689+6313 5015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 ٠, 817 • 201 • 5260 E-Mail: lab@traceanalysis.com. Certifications HUB: 1752439743100-86536 **WBENC:** 237019 DBE: VN 20657 NCTRCA WFWB38444Y0909 **NELAP** Certifications El Paso:

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317

T104704221-08-TX LELAP-02002

Midland: T104704392-08-TX

#### Analytical and Quality Control Report

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

Report Date: October 12, 2009

Work Order: 9100524 

Project Location: Lea Co., NM Project Name: St. Mary/Inca 1 TB Project Number: 114-6400305

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

			Date	Time	$\mathbf{Date}$
Sample	Description	Matrix	Taken	Taken	Received
211596	AH-1 0-1'	soil	2009-10-05	00:00	2009-10-05
211597	AH-1 1-1.5'	soil	2009-10-05	00:00	2009-10-05
211598	AH-1 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211599	AH-1 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211600	AH-1 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211601	AH-1 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211602	AH-1 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211603	AH-2 0-1'	soil	2009-10-05	00:00	2009-10-05
211604	AH-2 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211605	AH-2 2'-2.5'	soil	2009-10-05	00:00	2009-10-05

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Sample	Description	Matrix	Date Taken	Time Taken	Date Received
211607	AH-2 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211608	AH-2 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211609	AH-2 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211610	AH-3 0-1'	soil	2009-10-05	00:00	2009-10-05
211611	AH-3 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211612	AH-3 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211613	AH-3 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211614	AH-3 4'-4.5'	soil .	2009-10-05	00:00	2009-10-05
211615	AH-3 5'-5.5'	soil	2009-10-05	00:00	2009-10-05

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

This report consists of a total of 20 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael about

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

#### Standard Flags

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

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# Case Narrative

Samples for project St. Mary/Inca 1 TB were received by TraceAnalysis, Inc. on 2009-10-05 and assigned to work order 9100524. Samples for work order 9100524 were received intact at a temperature of 27.4 deg. 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	54819	2009-10-05 at 16:00	64189	2009-10-05 at 17:01
Chloride (Titration)	SM 4500-Cl B	54853	2009-10-07 at 12:24	64315	2009-10-09 at 13:33
Chloride (Titration)	SM 4500-Cl B	54854	2009-10-07 at 12:24	64316	2009-10-09 at 13:34
TPH DRO	Mod. 8015B	54818	2009-10-06 at 08:49	64188	2009-10-06 at 08:49
TPH GRO	S 8015B	54819	2009-10-05 at 16:00	64190	2009-10-05 at 17:29

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 9100524 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 guality 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.

# **Analytical Report**

#### Sample: 211596 - AH-1 0-1'

		1		
Midland		I		
BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
64189	Date Analyzed:	2009-10-05	Analyzed By:	AG
54819	Sample Preparation:	2009-10-05	Prepared By:	AG
	Midland BTEX 64189 54819	MidlandBTEXAnalytical Method:64189Date Analyzed:54819Sample Preparation:	MidlandIBTEXAnalytical Method:S 8021B64189Date Analyzed:2009-10-0554819Sample Preparation:2009-10-05	MidlandIBTEXAnalytical Method:S 8021B64189Date Analyzed:2009-10-0554819Sample Preparation:2009-10-05Prepared By:

		$\mathbf{RL}$			,	
Parameter	Flag	Result	Units	Dih	ution	$\mathbf{RL}$
Benzene		<0.0100	mg/Kg		1	0.0100
Toluene		< 0.0100	mg/Kg		1	0.0100
Ethylbenzene		<0.0100	mg/Kg		1	0.0100
Xylene		<0.0100	mg/Kg		1	0.0100
-				Spike	Percent	Recovery

Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotolucne (TFT)		1.77	mg/Kg	1	2.00	88	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	43.1 - 128.4

#### Sample: 211596 - AH-1 0-1'

Analysis: QC Batch: Prop. Batch:	Chloride (Titration) 64315 54852	Analytical Method: Date Analyzed: Sample Propagation	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR
ттер васси.		RL	2009-10-07	Fiepared by.	An
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		2060	mg/Kg	50	4.00

#### Sample: 211596 - AH-1 0-1'

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	64188	Date Analyzed:	2009-10-06	Analyzed By:	$\mathbf{kg}$
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
DRO	<u>.</u>	<50.0	mg/Kg	1	50.0

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 5 of 20 Lea Co., NM		5 of 20 o., NM 	
Surrogate	Flag	Result	Units	Dilu	tion A	Spike Amount	Percent Recovery	Rec Lir	overy nits
n-Triacontane		104	mg/Kg	1		100	104	13.2 -	- 219.3
Sample: 211	596 - AH-1 0-1					•			
Laboratory:	Midland								
Analysis:	TPH GRO		Analytica	l Method:	S 8015B		Prep Me	ethod: S	S 5035
QC Batch:	64190		Date Ana	lyzed:	2009-10-05	,	Analyze	d By: .	AG
Prep Batch:	54819		Sample P	reparation:	2009-10-05	•	Prepare	d By:	AG
			· RL						
Parameter	Flag		Result		Units		Dilution		$\mathbf{RL}$
GRO	· · · · · · · · · · · · · · · · · · ·		<1.00		mg/Kg		1		1.00
						Spike	Percent	Rec	overy
Surrogate		Flag	$\mathbf{Result}$	Units	Dilution	Amount	Recovery	Lir	nits
Trifluorotoluer	ne (TFT)		1.97	mg/Kg	1	2.00	98	65.3 -	- 109.9
4-Bromofluoro	benzene (4-BFB)		1.98	mg/Kg	1	2.00	99	61.7	- 119.9
Sample: 211	597 - AH-1 1-1.	5'							
Laboratory:	Midland								
Analysis:	Chloride (Titratic	on)	Analy	tical Metho	d: SM 45	00-Cl B	Prep l	Method:	N/A
QC Batch: (	64315		Date .	Analyzed:	2009-1	0-09	Analy	zed By:	AR
Prep Batch:	54853		Sampl	le Preparati	ion: 2009-1	0-07	Prepa	red By:	AR
			$\mathbf{RL}$						
Parameter	Flag		Result		Units		Dilution		$\mathbf{RL}$
Chloride			207.0		mg/Kg		100		4.00

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# Sample: 211598 - AH-1 2'-2.5'

Chloride	•	57.60	mg/Kg	100	4.00
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
		RL			
Prep Batch:	54853	Sample Preparation	2009-10-07	Prepared By:	AR
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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Report Date: October 12, 2009 114-6400305		Work Order: 9 St. Mary/Inca	Work Order: 9100524 St. Mary/Inca 1 TB		6 of 20 5., NM
Sample: 21	1599 - AH-1 3'-3.5'	,			
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	AR .
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	$\mathbf{AR}$
		RL			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride		10900	mg/Kg	100	4.00

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#### Sample: 211600 - AH-1 4'-4.5'

Parameter Chloride	Flag	Result 11100	Units mg/Kg	Dilution 100	RL 4.00
		$\mathbf{RL}$			
Prep Batch:	54853	Sample Preparation	: 2009-10-07	Prepared By:	AR
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Laboratory: Analysis:	Midland Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A

#### Sample: 211601 - AH-1 5'-5.5'

Chloride		19700	mg/Kg	100	4.00
Parameter	Elag	Result	Units	Dilution	$\mathbf{RL}$
		RL			
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	$\mathbf{AR}$
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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#### Sample: 211602 - AH-1 6'-6.5'

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Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	AR
		RL			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride		27400	mg/Kg	100	4.00

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114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

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# Sample: 211603 - AH-2 0-1'

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Laboratory:	Midland								
Analysis:	BTEX		Analytical	Method:	S 8021B		Prep Me	thod:	S 5035
QC Batch:	64189		Date Anal	yzed:	2009-10-05		Analyze	d By:	AG
Prep Batch:	54819		Sample Pr	eparation:	2009-10-05		Prepareo	i By:	AG
			RI	L					
Parameter	Flag		Resul	t	Units	]	Dilution		$\mathbf{RL}$
Benzene			< 0.010	0	mg/Kg		1		0.0100
Toluene			< 0.010	0	mg/Kg		1		0.0100
Ethylbenzene	9		< 0.010	0	mg/Kg		1		0.0100
Xylene	· · · · · · · · · · · · · · · · · · ·		< 0.010	0	mg/Kg		1		0.0100
						Spike	Percent	Re	covery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	L	imits
Trifluorotolu	ene (TFT)		1.81	mg/Kg	1	2.00	90	64.4	- 111.2
4-Bromofluor	obenzene (4-BFB)		1.88	mg/Kg	1	2.00	94	43.1	- 128.4

# Sample: 211603 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		4530	mg/Kg	100	4.00

#### Sample: 211603 - AH-2 0-1'

n-Triacontane	9	106	mg/Kg	1	100	106	13.2 - 21	9.3
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Recovery	Limits	.у
DRO			<50.0	r	ng/Kg	1	5	0.0
Parameter	Fla	g	RL Result		Units	Dilution		RL
Prep Batch:	54818	L	Sample Prep	paration: 20	09-10-06	Prepa	ared By: kg	S
QC Batch:	64188		Date Analyz	ed: 20	09-10-06	Analy	zed By: k	5
Laboratory: Analysis:	Midland TPH DRO		Analytical N	fethod: Me	od. 8015B	Prep	Method: N	/A

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Report Date 114-6400305	: October 12, 2009		Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 8 of 20 Lea Co., NM			
Sample: 21	1603 - AH-2 0-1'								
Laboratory:	Midland								
Analysis:	TPH GRO		Analytical	Method:	S 8015B		Prep Me	ethod:	S 5035
QC Batch:	64190		Date Ana	yzed:	2009-10-05		Analyze	d B <u>y</u> : .	AG
Prep Batch:	54819		Sample Pi	reparation:	2009-10-05		Prepareo	d By:	AG
			$\mathbf{RL}$						
Parameter	Flag		Result		$\mathbf{Units}$		Dilution		$\mathbf{RL}$
GRO			<1.00		mg/Kg		1		1.00
						Spike	Percent	Rec	overv
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Lir	nits
Trifluorotolue	ene (TFT)	0	2.02	mg/Kg	1	2.00	101	65.3 -	109.9
4-Bromofluor	obenzene (4-BFB)		2.01	mg/Kg	. 1	2.00	100	61.7 -	119.9
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853		Analy Date Sampl RL	tical Metho Analyzed: e Preparatio	d: SM 4500 2009-10-0 on: 2009-10-0	-CI B 09 07	Prep I Analy Prepa	Method: zed By: red By:	N/A AR AR
Parameter	Flag		Result		Units		Dilution		RL
Chloride			4930		mg/Kg				4.00
Sample: 21	1605 - AH-2 2'-2.5'								
Laboratory:	Midland								
Analysis:	Chloride (Titration)		Analy	tical Metho	d: SM 4500	-Cl B	Prep N	Method:	N/A
QC Batch:	64315		Date .	Analyzed:	2009-10-0	09	Analy	zed By:	$\mathbf{AR}$
Prep Batch:	54853 .		$\mathbf{Sampl}$	e Preparati	on: 2009-10-0	07	Prepa	red By:	AR
			$\mathbf{RL}$						
Parameter	Flag		Result		Units		Dilution		$\mathbf{RL}$
Chloride			8060		mg/Kg		100		4.00

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#### Sample: 211606 - AH-2 3'-3.5'

Laboratory:    Midland      Analysis:    Chloride (Titration)    A      QC Batch:    64316    I      Prep Batch:    54854    S	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
	Date Analyzed:	2009-10-09	Analyzed By:	AR
	Sample Preparation:	2009-10-07	Prepared By:	AR

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Report Date 114-6400305	:: October 12, 2009	Work Order: 9 St. Mary/Inca	100524 1 TB	Page Number: 5 Lea Ce	9 of 20 5., NM
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		12800	mg/Kg	100	4.00
Sample: 21	1607 - AH-2 4'-4.5'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-CI B	Prep Method:	N/A
QC Batch:	64316 E 4954	Date Analyzed:	2009-10-09	Analyzed By: Decenced Bay	AR
Frep Datch:	94894	Sample Preparation:	2009-10-07	r repared by:	Añ
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		12200	mg/Kg	100	4.00
Sample: 21 Laborator <u>y</u> : Analysis:	1608 - AH-2 5'-5.5' Midland Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method	N/A
000			0000 10 00	a log mounou.	

Chloride		16000	mg/Kg	100	4.00
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	RL
		$\mathbf{RL}$			
Prep Batch:	54854	Sample Preparation:	2009-10-07	Prepared By:	AR
QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$

# Sample: 211609 - AH-2 6'-6.5'

Parameter	Flag	RL Result	Units	Dilution	$\mathbf{RL}$
Prep Batch:	54854	Sample Preparation:	2009-10-07	Prepared By:	AR
Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 64316	Analytical Method: Date Analyzed:	SM 4500-Cl B 2009-10-09	Prep Method: Analyzed By:	N/A AR

# Sample: 211610 - AH-3 0-1'

Laboratory:	Midland BTEX	Applytical Mothod	C 2091D	Prop Mathody	S 5075
Analysis:	BIEA CALOR	Analytical Method:	5 6021D	Frep Method:	5 2032
QU Batch:	64189	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	Sample Preparation:	2009-10-05	Prepared By:	AG

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 10 of 20 Lea Co., NM		
			RI	J				
Parameter	$\mathbf{Flag}$		Resul	t	Units	]	Dilution	$\mathbf{RL}$
Benzene			< 0.010	0	mg/Kg		1	0.0100
Toluene			< 0.010	D	mg/Kg		1	0.0100
Ethylbenzene	`		< 0.010	0	mg/Kg		1	0.0100
Xylene			< 0.010	0	mg/Kg		1	0.0100
						Spike	Percent	Recovery
Surrogate		Flag	$\mathbf{Result}$	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	)		1.81	mg/Kg	1	2.00	90	64.4 - 111.2
4-Bromofluorobenzene	(4-BFB)		1.88	mg/Kg	1	2.00	94	43.1 - 128.4

#### Sample: 211610 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		4230	mg/Kg	100	4.00

#### Sample: 211610 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO 64188 54818	Midland TPH DRO 64188 54818			lethod: ed: aration:	Mod. 80 2009-10 2009-10	015B -06 -06	Prep Ana Prep	o Method: lyzed By: pared By:	N/A kg kg
				RL						
Parameter		Flag		$\mathbf{Result}$		$\operatorname{Unit}$	s	Dilution		$\mathbf{RL}$
DRO				52.0		mg/K	g	1		50.0
							Spike	Percent	Reco	very
Surrogate	Flag	Res	sult	Units	Dilut	ion	Amount	Recovery	Lin	nits
n-Triacontane	9		106	mg/Kg	1		100	106	13.2 -	219.3

#### Sample: 211610 - AH-3 0-1'

Laboratory: Analysis:	Midland TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	64190	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	Sample Preparation:	2009-10-05	Prepared By:	AG

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Report Date: October 114-6400305	12, 2009			Work Order St. Mary/In	: 9100524 nca 1 TB		Page Number: 11 of 20 Lea Co., NM			
Parameter	Flag		RL Result		Units		Dilution	RL		
GRO			<1.00		mg/Kg		. 1	1.00		
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits		
Trifluorotoluene (TFT)	1		2.02	mg/Kg	1	2.00	101	65.3 - 109.9		
4-Bromofluorobenzene	(4-BFB)		1.99	mg/Kg	1	2.00	100	61.7 - 119.9		

# Sample: 211611 - AH-3 1'-1.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
<b>D</b>		RL	<b>.</b>	<b>15.11</b>	
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		10100	ng/Kg	100	4.00

#### Sample: 211612 - AH-3 2'-2.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	$\operatorname{Flag}$	$\mathbf{Result}$	Units	Dilution	RL
Chloride		6930	mg/Kg	100	4.00

# Sample: 211613 - AH-3 3'-3.5'

Laboratory:	Midland		,		
Analysis:	Chloride (Titration)	Analytical Method	: SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54854 .	Sample Preparatio	n: 2009-10-07	Prepared By:	AR
		RL			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride		10200	mg/Kg	100	4.00

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1614 - AH-3 4'-4.5'      Midland Chloride (Titration)    Analytical Method: SM 4500-Cl B    Prep Method: N/A      64316    Date Analyzed: 2009-10-09    Analyzed By: AR      54854    Sample Preparation: 2009-10-07    Prepared By: AR      RL      Flag    Result    Units    Dilution    RL      615 - AH-3 5'-5.5'	Samalar 91	5	)	Work Or St. Mar	'der: 9100524 y/Inca 1 TB	4 6 	P.	age Number: 1 Lea Co	2 of 20 5., NM
Midland Chloride (Titration)    Analytical Method:    SM 4500-Cl B 2009-10-09    Prep Method:    N/A      64316 54854    Date Analyzed:    2009-10-09    Analyzed By:    AR      54854    Sample Preparation:    2009-10-07    Prepared By:    AR      Flag    RL Result    Units    Dilution    RL      615 - AH-3 5'-5.5'    Il 400    mg/Kg    100    4.00      64316 54854    Date Analyzed:    SM 4500-Cl B 2009-10-09    Prep Method:    N/A      64316 64316 54854    Date Analyzed:    2009-10-09    Analyzed By:    AR      Flag    RL Result    Units    Prep Method:    N/A      64316 54854    Date Analyzed:    2009-10-09    Analyzed By:    AR      Flag    RL Result    Units    Dilution    RL      Flag    Result    Units    Dilution    RL      9200    mg/Kg    100    4.00      nk (1)    QC Batch: 64188    Date Analyzed:    2009-10-06    Analyzed By:    kg      64188 54818    Date Analyzed:    2009-10-06    Analyzed By:	Sample: 2	1161 <u>4</u> - AH-3 4'-4	4.5'						
Online (Thradol)  Analyzed method:  Sumple Preparation:  2009-10-09  Analyzed By:  AR    64316  Date Analyzed:  2009-10-07  Prepared By:  AR    KL  RL  Dilution  RL    11400  mg/Kg  100  4.00    1615 - AH-3 5'-5.5'  Midland  Chloride (Titration)  Analytical Method:  SM 4500-Cl B  Prep Method:  N/A    64316  Date Analyzed:  2009-10-09  Analyzed By:  AR    64316  Date Analyzed:  2009-10-09  Analyzed By:  AR    64316  Date Analyzed:  2009-10-09  Analyzed By:  AR    54854  Sample Preparation:  2009-10-07  Prepared By:  AR    Flag  Result  Units  Dilution  RL    Flag  Result  Units  Dilution  RL    Flag  Result  Units  Dilution  RL    100  mg/Kg  100  4.00    nk (1)  QC Batch:  64188  Date Analyzed:  2009-10-06  Analyzed By:  kg    64188  Date Analyzed:  2009-10-06  Analyzed By:  kg	Laboratory:	Midland Chloride (Titrati	(n)	Analytical Mo	whod: SM	4500-CLB		Prep Method	N / A
State  Sample Preparation:  2009-10-07  Prepared By:  AR    Flag  Result  Units  Dilution  RL    11400  mg/Kg  100  4.00    1615 - AH-3 5'-5.5'  Midland  Sample Preparation:  2009-10-09  Analyzed By:  AR    64316  Date Analyzed:  2009-10-09  Analyzed By:  AR    54854  Sample Preparation:  2009-10-07  Prep Method:  N/A    64316  Date Analyzed:  2009-10-07  Prepared By:  AR    Flag  RL  RL  RL  RL  RL    Flag  Result  Units  Dilution  RL    100  4.00  Mg/Kg  100  4.00	OC Batch	64316	011)	Date Analyze	$d \cdot = 200$	9-10-09		Analyzed By:	AR
RL    Units    Dilution    RL      11400    mg/Kg    100    4.00      1615 - AH-3 5'-5.5'	Prep Batch:	54854		Sample Prepa	ration: 200	9-10-07		Prepared By:	AR
Flag  Result  Units  Dilution  RL    11400  mg/Kg  100  4.00    1615 - AH-3 5'-5.5'				BL.					
I1400      mg/Kg      100      4.00        1615 - AH-3 5'-5.5'      Midland      N/A      N/A        Chloride (Titration)      Analytical Method:      SM 4500-Cl B      Prep Method:      N/A        64316      Date Analyzed:      2009-10-09      Analyzed By:      AR        54854      Sample Preparation:      2009-10-07      Prepared By:      AR        RL      Result      Units      Dilution      RL        29200      mg/Kg      100      4.00        nk (1)      QC Batch: 64188      Date Analyzed:      2009-10-06      Analyzed By:      kg        64188      Date Analyzed:      2009-10-06      Analyzed By:      kg        54818      Oc Preparetion:      2009-10-06      Analyzed By:      kg	Parameter	Flag		Result	Uni	ts	Dilution	1	$\mathbf{RL}$
1615 - AH-3 5'-5.5'Midland Chloride (Titration)Analytical Method: SM 4500-Cl B Date Analyzed: 2009-10-09Prep Method: N/A64316 54854Date Analyzed: 2009-10-09 	Chloride			11400	mg/K	ζg	100	0	4.00
RL  Units  Dilution  RL    100  29200  mg/Kg  100  4.00    nk (1)  QC Batch: 64188  Date Analyzed: 2009-10-06  Analyzed By: kg    54818  OC Presentation: 2000-10-06  Presentation: here	Analysis: QC Batch: Prep Batch:	Chloride (Titratio 64316 54854	on)	Analytical Me Date Analyze Sample Prepa	thod: SM d: 200 ration: 200	4500-Cl B 9-10-09 9-10-07		Prep Method: Analyzed By: Prepared By:	N/A AR AR
Flag  Result  Units  Dilution  RL    29200  mg/Kg  100  4.00    nk (1)  QC Batch: 64188    64188  Date Analyzed: 2009-10-06  Analyzed By: kg    54818  OC Preparation: 2000-10-06  Prepared By: kg	<b>D</b>			RL					
z9200      mg/Rg      100      4.00        nk (1)      QC Batch: 64188	Parameter	Flag		Result		ts	Dilution	1	
and the second and th	Method Bl QC Batch:	lank (1) QC E 64188 54818	Batch: 64188	Date Analyzed:	2009-10-0	6		Analyzed By Prepared By	: kg
54616 GOTTEparation. 2009-10-00 Trepared by, kg	Prop. Ratch	04010		QO I Teparation.	2009-10-00	0		Trebated DY	. кв
	Prep Batch:			M	DL		••		
MDL Disk and the second	Prep Batch:		DI	<b>D</b>			linits		KL
MDL Flag Result Units RL	Prep Batch: Parameter		Flag	Res	sult				50
MDL    Flag  Result  Units  RL    <5.86	Prep Batch: Parameter DRO		Flag	Res <5	sult .86		mg/Kg		50
MDL  MDL    Flag  Result  Units  RL    <5.86	Prep Batch: Parameter DRO Surrogate	Flag	Flag Result	Res <5 Units	.86 Dilution	Spike Amount	mg/Kg Perce Recov	ent Rec very Lin	50 overy mits
ators work repared by	Method Bl QC Batch:	lank (1) QC E 64188 54818	Batch: 64188	Date Analyzed: QC Preparation: M	2009-10-00 2009-10-00	6 6		Analyzed B Prepared B	У У
MDL.	Prep Batch:			191.			Units		$\mathbf{RL}$
MDL Flag Result Units RL	Prep Batch: Parameter		Flag	Res	sult				
MDL Flag Result Units RL <5.86 mg/Kg 50	Prep Batch: Parameter DRO		Flag	Res <5	sult .86	· · · · · ·	mg/Kg		50
MDL  MDL    Flag  Result  Units  RL    <5.86	Prep Batch: Parameter DRO		Flag	Res <5	.86	Spike	mg/Kg Perce	ent Rec	50 overy
MDL  MDL    Flag  Result  Units  RL    <5.86	Prep Batch: Parameter DRO Surrogate	Flag	Elag Result	Res <5 Units	Dilution	Spike Amount	mg/Kg Perce Recov	ent Rec rery Liv	50 overy mits
MDL	Prep Batch:						Units		I

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Report Date: October 114-6400305	r 12, 2009	Wor St.	k Order: Mary/II	: 9100524 nca 1 TB		Page Nu	mber: 1 Lea C	3 of 20 o., NM
method blank continue	d							
Danamatan	El		MD Date		17			пт
Toluone	Flag					6 		
Ethylbenzene			< 0.002	40	mg/K	Б or		0.01
Xylene			<0.002	50	mg/K	g		0.01
0.	······	<u>.</u>				0		
<b>a</b>				-	Spike	Percent	Rec	overy
Surrogate	Flag	Result	Jnits	Dilution	Amount	Recovery	Liı	nits
Trifluorotoiuene (TFT	) (1 DED)	1.80 m	ig/Kg	1	2.00	· 90	64.9	- 122.7
4-Bromonuorobenzene	(4-BFB)	1.57 m	ig/Kg	1	2.00	/8	43.9	- 121.9
Method Blank (1)	QC Batch: 64190							
0 (1 Part 1 - 64100			1 00	00 10 OF				
QU Batch: 64190		Date Analyz	ed: 20	J09-10-05		Analy	zed By:	AG
Prep Batch: 54819		QC Preparat	ion: 20	09-10-05		Prepa	red By:	AG
			MDL					
Parameter	Flag		Result		Units			$\mathbf{RL}$
GRO	-		< 0.396		mg/K	3		1
					<b>a</b> 1			
Surrogata	Flor	Bogult	Tinita	Dilution	Spike	Percent	Ree	covery
Trifluorotoluene (TFT	r tag	$\frac{1}{204}$	Units		2 00	102	LL 2 22	$\frac{1000}{100}$
4-Bromofluorobenzene	/ (4-BFB)	166 r	ng/Kg	1	2.00	83	62.	. 120 5
	(1515)	1.00 1	16/116	1	2.00		02 -	- 120.0
Method Blank (1)	QC Batch: 64315							
QC Batch: 64315		Date Analyz	ed: 20	09-10-09		Analy	zed Bv:	AR
Prep Batch: 54853		QC Preparat	ion: 20	009-10-07		Prepa	red By:	AR
						<b>*</b> .	•	
	-		MDL		/			
Parameter	Flag		Result		Units			RL
Unioride			<2.18		mg/Kg	5		4
Method Blank (1)	QC Batch: 64316							
······································								
QC Batch: 64316		Date Analyze	ed: 20	09-10-09		Analyz	zed By:	AR
Prep Batch: 54854		QC Preparat	ion: 20	09-10-07		Prepa	ed By:	AR
			MDL					
Parameter	Flag		Result		Units			$\mathbf{RL}$
Chloride			<2.18	-	mg/Kg	· · · · · · · · · · · · · · · · · · ·		4

Report Date: October 1 114-6400305	.2, 2009			Work St. M	: Order: 910 Mary/Inca 1	)052   TB	4 }		Page Number: 14 of 20 Lea Co., NM			
Laboratory Control S	Spike (LC	S-1)										
QC Batch: 64188 Prep Batch: 54818			Date A QC Pi	Analyzo reparat	ed: 2009- ion: 2009-	10-0 10-0	6 6			Ana Prej	lyzed B pared B	y: kg y: kg
		$\mathbf{LC}$	s				Spike '	Ma	trix		]	Rec.
Param		Resi	ılt	Units	Dil.	4	Amount	Res	sult	Rec.	L	imit
DRO		196	5	mg/Kg	1		250	<5	.86	78	57.4	- 133.4
Percent recovery is base	d on the sp	oike result.	RPD is	s based	on the spik	e an	d spike d	uplicate	e resu	ılt.		
Param		LCSD Besult	Units	Dil	Spike Amoun	t	Matrix Result	Bec	1	Rec.	RPD	RPD Limit
DRO		190	mg/Kg	<u>r 1</u>	250		<5.86	76	57.4	4 - 133.4	3	20
Percent recovery is based	d on the sr	oike result	RPD is	s based	on the spik	e an	d snike d	unlicate	e resu	llt.		
receive recovery is babe.	a on one sp	100000			on the spin	0 011	a opino a	apiroat	51004			
~	LCS	LCSD	_				Spike	LCS	5	LCSD	]	Rec.
Surrogate	Result	Result	; l	Jnits	Dil.	A	mount	Rec		Rec.	L	imit
n-Triacontane	107	102	m	ig/Kg	1		100	107	,	102	48.5	- 146.7
QC Batch: 64189 Prep Batch: 54819			Date A QC Pr	analyze eparati	d: 2009-1 on: 2009-1	0-05 0-05	5			Anal; Prepa	yzed By ared By	: AG : AG
		LCS	5			S	bike	Mat	rix		I	Rec.
Param		Resu	lt	Units	Dil.	Ar	nount	Res	ult	Rec.	L	imit
Benzene		1.85	i n	ng/Kg	1		2.00	<0.00	)410	92	75.4	- 115.7
Toluene		1.82	2 D	ng/Kg	1	:	2.00	<0.00	0310	91	78.4	- 113.6
Ethylbenzene		1.74	l n	ng/Kg	1	:	2.00	<0.00	)240	87	76 -	- 114.2
Xylene		5.24	l n	ng/Kg	1		6.00	<0.00	)650	87	76.9	- 113.6
Percent recovery is base	d on the sp	ike result.	RPD is	based	on the spik	e an	d spike d	uplicate	e resu	lt.		
		LCSD			Spike	1	Matrix			Rec		RPD
Param		Result	Units	Dil.	Amount		Result	Rec.		Limit	RPD	Limit
Benzene		1.87	mg/Kg	1	2.00	<	0.00410	94	75.	4 - 115.7	1	20
Toluene		1.83	mg/Kg	1	2.00	<	0.00310	92	78.	4 - 113.6	0	20
Ethylbenzene		1.75	mg/Kg	1	2.00	<	0.00240	88	76	- 114.2	1	20
Xylene		5.33	mg/Kg	1	6.00	<	0.00650	89	76.	9 - 113.6	2	20
Percent recovery is based	d on the sp	ike result.	RPD is	based	on the spik	e an	d spike d	uplicate	e resu	lt.		
		LCS	5 I.C	CSD			Spi	ke	LCS	LCSD	Ţ	Rec.
Surrogate		Resul	lt Re	esult	Units	Dil	. Amo	unt	Rec.	Rec.	Limit	
Trifluorotoluene (TFT)		1.78	3 1	.80	mg/Kg	1 2.00		0	89	90	65 -	122.9
4-Bromofluorobenzene (4	4-BFB)	1.80	) 1	.80	mg/Kg	1	2.0	0	<b>9</b> 0	<b>9</b> 0	43.8	- 124.9

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114-6400305	Work Order: 9100524Page Number: 15 of 2St. Mary/Inca 1 TBLea Co., NM										15 of 20 Co., NM
Laboratory Control Spike (L	CS-1)										
QC Batch: 64190	]	Date Ana	alyzed:	2009-10	0-05				Anal	yzed By	y: AG
Prep Batch: 54819		QC Prep	aration	2009-10	0-05				Prep	ared By	: AG
	LCS				$\mathbf{Sp}$	ike	Mati	rix			Rec.
Param	Result	t U	nits	Dil.	Am	ount	Rest	ult	Rec.	I	Limit
GRO	17.1	mg	g/Kg	<u> </u>	20	).0	<0.3	96	86	52.5	9 - 114.3
Percent recovery is based on the	spike result. I	RPD is b	ased on	the spike	e and s	pike du	plicate	result.	•		
	LCSD			Spike	Ma	trix		Re	ec.		RPD
Param	Result	Units	Dil.	Amount	Re	sult	Rec.	Liı	nit	RPD	Limit
GRO	17.6 1	ng/Kg	1	20.0	<0	.396	88	52.5 -	114.3	3	20
Percent recovery is based on the	spike result. I	RPD is b	ased on	the spike	e and s	pike du	plicate	result			
	LCS	LCS	D			Spik	e I	LCS	LCSD		Rec.
Surrogate	Result	Resu	lt U	Jnits	Dil.	Amou	nt I	Rec.	Rec.	Ι	Limit
Trifluorotoluene (TET)	2.02	2.03	3 m	g/Kg	1	2.00	)	101	102	66.2	2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.83	1.81	l m	g/Kg	1	2.00	)	92	90	64.1	- 127.4
QC Batch: 64315 Prep Batch: 54853	]	Date Ana QC Prep	alyzed: aration:	2009-10 2009-10	0-09 0-07				Anal Prep	yzed By ared By	y: AR y: AR
	LCS	1			4	Spike	М	latrix			Rec.
Param	Resu	lt, 1	Units	Dil.	A	mount	R	esult	Rec		Limit
Chloride	101	n	ıg/Kg	1		100	<	(2.18	101		85 - 115
Percent recovery is based on the	spike result. I	RPD is b	ased on	the spike	and s	pike du	plicate	result.			
	LCSD			Spike	. N	latrix		F	lec.		RPD
Param	Result	Units	Dil.	Amour	nt I	Result	Rec.	$\mathbf{L}\mathbf{i}$	imit	RPD	Limit
Chloride	100	mg/Kg	1	100		<2.18	100	85	- 115	1	20
Percent recovery is based on the :	spike result. I	RPD is b	ased on	the spike	and s	pike du	plicate	result.			
Laboratory Control Spike (L	CS-1)										
QC Batch: 64316	I	Date Ana	alyzed:	2009-10	)-09				Anal	yzed By	: AR
Prep Batch: 54854	(	QC Prep	aration:	2009-10	)-07				Prep	ared By	: AR
	LCS				(	Snike	м	atriv			Rec
Param	Resul	t I	Units	Dil.	A	mount	R	esult	Rec		Limit.
Chloride	99.1	n	ig/Kg	1		100	<	2.18	99		35 - 115

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Report Date: October 1 114-6400305	2, 2009			Work O St. Ma	rder: 910 ry/Inca 1	0524 TB		Page Number: 16 of 20 Lea Co., NM			
Param Chloride		LCSD Result 100	Units mg/K	s Dil.	Spike Amour 100	e Matrix nt Result <2.18	Rec.	Rec. Limit 85 - 115	RPD 1	RPD Limit 20	
Percent recovery is based	l on the sp	ike result.	RPD is	based or	the spike	e and spike d	uplicate re	esult.			
Matrix Spike (MS-1)	Spiked	Sample: 2	11151								
QC Batch: 64188 Prep Batch: 54818			Date A QC Pr	Analyzed: reparation	2009-1 a: 2009-1	.0-06 .0-06		An Pre	alyzed B pared B	y: kg y: kg	
Param		MS Resi	5 ilt	Units	Dil.	Spike Amount	Matrix Result	Rec.	] I	Rec. Jimit	
DRO		220	) 1	ng/Kg	1	250	< 5.86	88	35.2	- 167.1	
Parcent recovery is based	on the cr	iko rocult		hased or	the coiler	and eniles d	unlicato re	enlt			
i ercent recovery is based	t on the sp	ine result.	111 D 15	Dascu OI	i uie spike	e and spike d	upiicate re	.3u16.			
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
DRO		228	mg/Kg	1	250	< 5.86	91 3.	5.2 - 167.1	4	20	
Percent recovery is based	l on the sp	ike result.	RPD is	based on	the spike	e and spike d	uplicate re	sult.			
	MS	MSD				Spike	MS	MSD	]	Rec.	
Surrogate	Result	Result	t 1	Units	Dil.	Amount	Rec.	· Rec.	Ľ	imit	
n-Triacontane	101	102	m	ıg/Kg	1	100	101	102	34.5	- 178.4	
<b>Matrix Spike (MS-1)</b> QC Batch: 64189 Prep Batch: 54819	Spiked	Sample: 2	11517 Date A QC Pre	nalyzed: eparation	2009-1( : 2009-1(	0-05 0-05		Ana Prep	lyzed By pared By	: AG : AG	
		MS				Spike	Matrix		1	lec.	
Param		Resu	lt T	Units	Dil.	Amount	Result	Rec.	L	imit	
								0 05	57 7	- 140.7	
Benzene		1.90	) m	ıg/Kg	1	2.00	< 0.0041	0 00	01.1	140.0	
Benzene Toluene		1.90 1.87	) n ' m	ıg/Kg ıg/Kg	1 1	$\begin{array}{c} 2.00 \\ 2.00 \end{array}$	<0.0041	0 <sup>.</sup> 94	53.4	- 140.0	
Benzene Toluene Ethylbenzene		1.90 1.87 1.84	) m ' m   m	ig/Kg ig/Kg ig/Kg	1 1 1	$2.00 \\ 2.00 \\ 2.00 \\ 2.00$	<0.00410 <0.00310 <0.00240	0 <sup>.</sup> 94 0 92	53.4 62.1	- 146.6 - 141.6	
Benzene Toluene Ethylbenzene Xylene		1.90 1.87 1.84 5.64	) m ' m m m	ng/Kg ng/Kg ng/Kg ng/Kg	1 1 1 1	2.00 2.00 2.00 6.00	<0.00410 <0.00310 <0.00240 <0.00650	0 <sup>.</sup> 94 0 92 0 94	53.4 62.1 61.2	- 146.6 - 141.6 - 142.7	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based	on the sp	1.90 1.87 1.84 5.64 ike result.	m m m RPD is	ng/Kg ng/Kg ng/Kg ng/Kg based on	1 1 1 1 the spike	2.00 2.00 2.00 6.00 e and spike d	<0.00410 <0.00310 <0.00240 <0.00650 uplicate re	0 <sup>.</sup> 94 0 92 0 94 sult.	53.4 62.1 61.2	- 146.6 - 141.6 - 142.7	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based	on the sp	1.90 1.87 1.84 5.64 ike result. MSD	) m m m RPD is	ng/Kg ng/Kg ng/Kg ng/Kg based on	1 1 1 the spike Spike	2.00 2.00 2.00 6.00 2 and spike du Matrix	<0.00410 <0.00310 <0.00240 <0.00650 uplicate re	0 94 0 92 0 94 sult. Rec.	53.4 62.1 61.2	- 140.6 - 141.6 - 142.7 RPD	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param	on the sp	1.90 1.87 1.84 5.64 ike result. MSD Result	o m m m RPD is Units	ig/Kg ig/Kg ig/Kg ig/Kg based on Dil.	1 1 1 the spike Spike Amount	2.00 2.00 2.00 6.00 and spike du Matrix Result	<0.00410 <0.00310 <0.00240 <0.00650 uplicate re	0 94 0 92 0 94 sult. Rec. Limit	53.4 62.1 61.2 RPD	- 140.6 - 141.6 - 142.7 RPD Limit	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzene	on the sp	1.90 1.87 1.84 5.64 ike result. MSD Result 2.01	m m RPD is Units mg/Kg	ig/Kg ig/Kg ig/Kg ig/Kg based on Dil. 1	1 1 1 the spike Spike Amount 2.00	2.00 2.00 2.00 6.00 e and spike dr Matrix Result <0.00410	<0.0041 <0.0031 <0.0024 <0.0065 uplicate re <u>Rec.</u> 100 5	0 94 0 92 0 94 sult. Rec. Limit 7.7 - 140.7	53.4 62.1 61.2 RPD 6	- 146.6 - 141.6 - 142.7 RPD Limit 20	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzene Toluene	on the sp	1.90 1.87 1.84 5.64 ike result. MSD Result 2.01 1.99	m m RPD is Units mg/Kg mg/Kg	ig/Kg ig/Kg ig/Kg based on Dil. 1 1	1 1 1 the spike Spike Amount 2.00 2.00	2.00 2.00 2.00 6.00 e and spike du Matrix Result <0.00410 <0.00310	<0.0041 <0.0031 <0.0024 <0.0065 uplicate re <u>Rec.</u> 100 5 100 5	0 94 0 92 0 94 sult. Rec. Limit 7.7 - 140.7 3.4 - 146.6	53.4 62.1 61.2 RPD 6 6	- 146.6 - 141.6 - 142.7 RPD Limit 20 20	
Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzene Toluene Ethylbenzene	on the sp	1.90 1.87 1.84 5.64 ike result. MSD Result 2.01 1.99 1.97	RPD is Units mg/Kg mg/Kg mg/Kg	ig/Kg ig/Kg ig/Kg based on Dil. 1 1 1	1 1 1 the spike Amount 2.00 2.00 2.00	2.00 2.00 2.00 6.00 e and spike du Matrix Result <0.00410 <0.00310 <0.00240	<0.0041 <0.0031 <0.0024 <0.0065 uplicate re Rec. 100 5 98 6	0 94 0 92 0 94 sult. Rec. Limit 7.7 - 140.7 3.4 - 146.6 2.1 - 141.6	53.4 62.1 61.2 RPD 6 6 7	- 146.6 - 141.6 - 142.7 RPD Limit 20 20 20 20	

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

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Report Date: October 12, 2009 114-6400305			Work St. M	Order: 910 lary/Inca 1	0524 TB				Page Number: 17 of 20 Lea Co., NM			
	MS	N	MSD			Spi	ke	MS	MSD		Rec.	
Surrogate	Resu	lt R	esult	Units	Dil.	Amo	unt	Rec.	Rec.		Limit	
Trifluorotoluene (TET)	1.80	) :	1.83	mg/Kg	1	2		90	92	62.	7 - 119.6	
4-Bromofluorobenzene (4-BFB)	1.90	5 1	1.96	mg/Kg	1	2		98	98	49.	6 - 136.7	
Matrix Spike (MS-1) Spiked	l Sample: 2	11517										
QC Batch: 64190		Date A	Analyzed	: 2009-1	0-05				Ana	vzed B	v: AG	
Prep Batch: 54819		QC Pi	reparatio	n: 2009-1	0-05				Prep	ared B	y: AG	
	M	S				Spike	М	atrix			Rec.	
Param	Res	ult	Units	Dil.	A	mount	Re	$\operatorname{esult}$	Rec.		$\operatorname{Limit}$	
GRO	17.	6	mg/Kg	1		20.0		1.6	80	1	0 - 198.3	
Percent recovery is based on the s	pike result.	RPD is	s based o	on the spike	e and	spike dı	plicate	e result.				
	MOD							D			DDD	
Desterm	MSD	TT	. D:1	Spike	· ۲	Matrix	Daa	K T	ec.	מחת	RPD	
CRO	10 0	Units	$\frac{5}{2}$ DII.	Amoun	ι.		Rec.	10	$\frac{108.2}{108.2}$			
Breast and a line the state	10.2		<u>.</u> g <u>1</u>	20.0	1	1.0	1. 1	10 -	190.0	5	20	
rercent recovery is based on the s	pike result.	RPD 1	s based c	on the spike	e and	<i>spike</i> а	ipiicate	e result.				
	MS	<b>3</b> 1	MSD			$S_{I}$	oike	MS	MSI	D	Rec.	
Surrogate	Rest	ilt F	lesult	Units	Dil	. Am	ount	Rec.	Rec		Limit	
Trifluorotoluene (TET)	2.0	1	2.05	mg/Kg	1		2	100	102	26	5.5 - 123	
4-Bromofluorobenzene (4-BFB)	2.1	7	2.22	mg/Kg	1		2	108	111	5	8.6 - 140	
Matrix Spike (MS-1) Spiked QC Batch: 64315 Prep Batch: 54853	Sample: 2	11605 Date A QC Pr	Analyzed reparatio	: 2009-1 n: 2009-1	0-09 0-07				Anal Prep	yzed B ared B	y: AR y: AR	
	М	S				Spike	N	Aatrix			Rec.	
Param	Res	ult	Units	Dil.		Amount	I	Result	$\mathbf{Re}$	с.	Limit	
Chloride	187	00	mg/Kg	100		10000		8060	10	6	85 - 115	
Percent recovery is based on the s	pike result.	RPD is	s based o	on the spike	and	spike du	plicate	e result.				
	MGD			Cuiles		Motrie		מ	00		חסמ	
Param	Result	linit	s Dil	Атош	; at.	Result	Rec	n Li	mit.	RPD	Limit	
Chloride	18800	mø/K	ε ΕΠ Σε 100	) 10000	)	8060	107	. Di 85	- 115	<u>10.D</u>	20	
				- +1 - ''				1.			20	
Matrix Spike (MS-1) Spiked	Sample: 2.	11615	s vaseu u	n me spike	; and	shike ar	ipicate	; 103016.				

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QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Prep Batch:	54854	QC Preparation:	2009-10-07	Prepared By:	$\mathbf{AR}$

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB				Page Number: 18 of 20 Lea Co., NM			
Param Chloride		R	MS Result Units		Dil.	Spike Amount	Matrix Result		Rec.	Rec. Limit
		4	0400	mg/Kg	100	10000	29200		112	85 - 115
Percent reco	overy is based or	n the spike resul	t. RPD is	based on t	the spike a	nd spike dup	plicate r	esult.		
		MSD			Snike	Matrix		Rec		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		40600	mg/Ke	<u>ξ 100</u>	10000	29200	114	85 - 115	5 0	20
Percent reco	verv is based o	n the spike resul	t. RPD is	based on '	the spike a	nd spike dur	olicate r	esult.		
<b>Standard (</b> QC Batch:	CCV-2) 64188		Date A	nalyzed:	2009-10-0	6			Analyzed	By: kg
			COVe	cc.	Va	COVe		Dencent		
			True	Fou	vs Ind	Percent	Т	Recovery		Data
Param	Flag	Units	Conc.	· Cor	шu пС.	Recovery	1	Limits	۵	nalvzed
DRO		mg/Kg	250	23	6	94		80 - 120		09-10-06
Standard (CCV-3) QC Batch: 64188			Date Analyzed: 2009-10-06				Analyzed By: kg			
									ν,	
			CCVs	· CC	Vs	CCVs		Percent	υ,	
			CCVs True	CC Fou	Vs	CCVs Percent	I	Percent Recovery	υ,	Date
Param	Flag	Units	CCVs True Conc.	CC Fou Cor	Vs ind nc.	CCVs Percent Recovery	Ι	Percent lecovery Limits	A	Date .nalyzed
Param DRO	Flag	Units mg/Kg	CCVs True Conc. 250	CC Fou Cor 24	Vs ind nc. 9	CCVs Percent Recovery 100	I	Percent Recovery Limits 80 - 120	A	Date nalyzed 09-10-06
Param DRO Standard ( QC Batch:	Flag CCV-3) 64189	Units mg/Kg	CCVs True Conc. 250 Date Ar	CC Fou Cor 24	Vs ind nc. 9 2009-10-05	CCVs Percent Recovery 100	I	Percent Recovery Limits 80 - 120 A	A 20 nalyzed B	Date nalyzed 09-10-06
Param DRO Standard ( QC Batch:	Flag CCV-3) 64189	Units mg/Kg	CCVs True Conc. 250 Date Ar	CC Fou Cor 24 nalyzed:	Vs ind nc. 9 2009-10-05 CCVs	CCVs Percent Recovery 100	I	Percent Recovery Limits 80 - 120 A Percent	A 20 nalyzed B	Date nalyzed 09-10-06
Param DRO Standard ( QC Batch:	Flag CCV-3) 64189	Units mg/Kg	CCVs True Conc. 250 Date Ar CCV True	CC Fou Cor 24 nalyzed: s (	Vs ind nc. 9 2009-10-05 CCVs Found	CCVs Percent Recovery 100 CCVs Percent		Percent Recovery Limits 80 - 120 A Percent Recovery	A 20 nalyzed B	Date nalyzed 09-10-06
Param DRO Standard ( QC Batch: Param	Flag CCV-3) 64189 Flag	Units mg/Kg Units	CCVs True Conc. 250 Date An CCV True Conc	CC Fou Cor 24 nalyzed: s ( F	Vs ind nc. 9 2009-10-05 CCVs Found Conc.	CCVs Percent Recovery 100 CCVs Percent Recovery	I	Percent Recovery Limits 80 - 120 A Percent Recovery Limits	A 20 nalyzed B A	Date nalyzed 09-10-06 by: AG Date nalyzed
Param DRO Standard ( QC Batch: Param Benzene	Flag CCV-3) 64189 Flag	Units mg/Kg Units mg/Kg	CCVs True Conc. 250 Date Ar CCV True Conc 0.100	CC Fou Con 24 nalyzed: s ( F F ( ) 0	Vs ind nc. 9 2009-10-05 CCVs Found Conc. ).0956	CCVs Percent Recovery 100 CCVs Percent Recovery 96	I 	Percent Recovery Limits 80 - 120 A Percent Recovery Limits 80 - 120	A A A A	Date nalyzed 09-10-06 y: AG Date nalyzed 09-10-05
Param DRO Standard ( QC Batch: Param Benzene Tolucne	Flag CCV-3) 64189 Flag	Units mg/Kg Units mg/Kg mg/Kg	CCVs True Conc. 250 Date Ar CCV True Conc 0.100 0.100	CC Fou Cor 24 nalyzed: s ( F F ( ) 0 ) 0	Vs ind nc. 9 2009-10-05 CCVs Found Conc. ).0956 ).0932	CCVs Percent Recovery 100 CCVs Percent Recovery 96 93		Percent Recovery Limits 80 - 120 A Percent Recovery Limits 80 - 120 80 - 120	A A A A 20 20	Date <u>nalyzed</u> <u>009-10-06</u> by: AG Date <u>nalyzed</u> <u>009-10-05</u> <u>09-10-05</u>
Param DRO Standard ( QC Batch: Param Benzene Tolucne Ethylbenzen	Flag CCV-3) 64189 Flag	Units mg/Kg Units mg/Kg mg/Kg mg/Kg	CCVs True Conc. 250 Date Ar CCV True Conc 0.100 0.100 0.100	CC  Fou  Con  Z4  Dalyzed:  s  (      G      G      G	Vs ind nc. 9 2009-10-05 CCVs Found Conc. 1.0956 0.0932 0.0877	CCVs Percent Recovery 100 CCVs Percent Recovery 96 93 88		Percent Recovery Limits 80 - 120 A Percent Recovery Limits 80 - 120 80 - 120 80 - 120	<u>A</u>   	Date <u>nalyzed</u> 09-10-06 y: AG Date <u>nalyzed</u> 09-10-05 09-10-05 09-10-05

# Standard (CCV-4)

QC Batch: 64189

Date Analyzed: 2009-10-05

Analyzed By: AG

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114-640030	te: October 12, 05	2009	Wi St	ork Order: 910 t. Mary/Inca 1	Page Number: 19 of 20 Lea Co., NM			
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Elag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Benzene	-	mg/Kg	0.100	0.0908	91	80 - 120	2009-10-05	
Toluene		mg/Kg	0.100	0.0885	88	80 - 120	2009-10-05	
Ethylbenze	ne	mg/Kg	0.100	0.0832	83	80 - 120	2009-10-05	
Xylene	,,,,,,, _	mg/Kg	0.300	0.252	84	80 - 120	2009-10-05	
Standard	(CCV-2)							
QC Batch: 64190			Date Analyzed: 2009-10-05			Analyzed By: AG		
			CCVs	CCVs	CCVs	Percent		
			True	Found	Percent	Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
GRO	1.106	mg/Kg	1.00	1.02	102	80 - 120	2009-10-05	
<b>Standard</b> QC Batch:	(CCV-3) 64190		Date Analy	zed: 2009-10-	05	Anal	yzed By: AG	
			CCVs	CCVs	CCVs	Percent		
	3		Thus					
Danam			irue	Found	Percent	Recovery	Date	
r, ar ann	Flag	Units	Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyzed	
GRO	Flag	Units mg/Kg	Conc.	Found Conc. 1.04	Percent Recovery 104	Recovery Limits 80 - 120	Date Analyzed 2009-10-05	
GRO Standard	Flag (ICV-1)	Units mg/Kg	Conc.	Found Conc. 1.04	Percent Recovery 104	Recovery Limits 80 - 120	Date Analyzed 2009-10-05	
GRO Standard QC Batch:	Flag (ICV-1) 64315	Units mg/Kg	Conc. 1.00 Date Analy	Found Conc. .1.04 zzed: 2009-10-	Percent Recovery 104	Recovery Limits 80 - 120 Anal	Date Analyzed 2009-10-05 yzed By: AR	
GRO Standard QC Batch:	Flag (ICV-1) 64315	Units mg/Kg	Date Analy	Found Conc. .1.04 zzed: 2009-10- ICVs	Percent Recovery 104 09 ICVs	Recovery Limits 80 - 120 Anal Percent	Date Analyzed 2009-10-05 yzed By: AR	
GRO Standard QC Batch:	Flag (ICV-1) 64315	Units mg/Kg	Date Analy ICVs True	Found Conc. .1.04 yzed: 2009-10- ICVs Found	Percent Recovery 104 09 ICVs Percent	Recovery Limits 80 - 120 Anal Percent Recovery	Date Analyzed 2009-10-05 yzed By: AR Date	
GRO Standard QC Batch: Param	Elag (ICV-1) 64315	Units mg/Kg Units	Date Analy ICVs True Conc.	Found Conc. 1.04 zed: 2009-10- ICVs Found Conc.	Percent Recovery 104 09 ICVs Percent Recovery	Recovery Limits 80 - 120 Anal Percent Recovery Limits	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed	
GRO Standard QC Batch: Param Chloride	Flag (ICV-1) 64315 Flag	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100	Found Conc. 1.04 /zed: 2009-10- ICVs Found Conc. 101	Percent Recovery 104 09 ICVs Percent Recovery 101	Recovery Limits 80 - 120 Anal Percent Recovery Limits 85 - 115	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09	
GRO Standard QC Batch: Param Chloride	Flag (ICV-1) 64315 Flag	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100	Found Conc. 1.04 /zed: 2009-10- ICVs Found Conc. 101	Percent Recovery 104 09 ICVs Percent Recovery 101	Recovery Limits 80 - 120 Anal Percent Recovery Limits 85 - 115	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09	
GRO Standard QC Batch: Param Chloride Standard	Flag (ICV-1) 64315 Flag (CCV-1)	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100	Found Conc. .1.04 yzed: 2009-10- ICVs Found Conc. 101	Percent Recovery 104 09 ICVs Percent Recovery 101	Recovery Limits 80 - 120 Anal Percent Recovery Limits 85 - 115	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09	
GRO Standard QC Batch: Param Chloride Standard QC Batch:	Flag (ICV-1) 64315 Flag (CCV-1) 64315	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100 Date Analy	Found Conc. .1.04 yzed: 2009-10- ICVs Found Conc. 101 yzed: 2009-10-	Percent Recovery 104 09 ICVs Percent Recovery 101	Recovery Limits 80 - 120 Analy Percent Recovery Limits 85 - 115 Analy	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09	
GRO Standard QC Batch: Param Chloride Standard QC Batch:	Flag (ICV-1) 64315 Flag (CCV-1) 64315	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100 Date Analy CCVs	Found Conc. 1.04 /zed: 2009-10- ICVs Found Conc. 101 /zed: 2009-10- CCVs	Percent Recovery 104 09 ICVs Percent Recovery 101 09 09 CCVs	Recovery Limits 80 - 120 Analy Percent Recovery Limits 85 - 115 Analy Percent	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09	
GRO Standard QC Batch: Param Chloride Standard QC Batch:	Flag (ICV-1) 64315 Flag (CCV-1) 64315	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100 Date Analy CCVs True	Found Conc. 1.04 /zed: 2009-10- ICVs Found Conc. 101 /zed: 2009-10- CCVs Found	Percent Recovery 104 09 ICVs Percent Recovery 101 09 09 CCVs Percent	Recovery Limits 80 - 120 Anal Percent Recovery Limits 85 - 115 Anal Percent Recovery	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09 yzed By: AR Date	
Standard QC Batch: Param Chloride Standard QC Batch: Param	Flag (ICV-1) 64315 Flag (CCV-1) 64315 Flag	Units mg/Kg Units mg/Kg	Date Analy ICVs True Conc. 100 Date Analy CCVs True Conc.	Found Conc. 1.04 /zed: 2009-10- ICVs Found Conc. 101 /zed: 2009-10- CCVs Found COVs Found Conc.	Percent Recovery 104 09 ICVs Percent Recovery 101 09 09 CCVs Percent Recovery	Recovery Limits 80 - 120 Anal Percent Recovery Limits 85 - 115 Anal Percent Recovery Limits	Date Analyzed 2009-10-05 yzed By: AR Date Analyzed 2009-10-09 yzed By: AR Date Analyzed	

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 20 of 20 Lea Co., NM		
Standard (	ICV-1)							
QC Batch: 64316			Date Analyzed: 2009-10-09			Analyzed By: AR		
Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
Chloride		mg/Kg	100	97.5	98	85 - 115	2009-10-09	
Standard (	CCV-1)							
QC Batch: 64316			Date Analyzed: 2009-10-09			Analyzed By: AR		
			CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride		mg/Kg	100	102	102	85 - 115	2009-10-09	

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PAGE: Z OF: Z	ANALYSIS REQUEST (Circle or Specify Method No.)	H <sup>g</sup> Se H <sup>g</sup> Se	D2 3 Ar b9 1 Ar b9 2 (EXF 2 (EXF	TX100	A A A A A A A A A A A A A A A A A A A	Рен 8015 Рен 8270 Рен 8270 Рен 8270 ПСЕР Метаја ТСЕР Матаја ТСЕР Уојајја Наја 5080/6 Селб 5001, 8 Селб 5001, 8 Селб 5001, 8 Селб 5001, 8 Селб 5000/6 Селб 5001, 8 Селб 5000/6 Селб 5001, 8 Селб 5000/6 Селб 50000/6 Селб 5000000000000000											SAMPLED BY: (Print & Inthely A Date: 1/2/2/0/	SAMPLE SHIPPED BY: (Cicie) AIRBILL #:		TETRA TECH CONTACT PERSON:	- Iler Twore & Autorizad:	ov ee .
hodv Record				PRESERVATIVE		ФІЕХ 8051В           ИОИЄ           НИОЗ           НИОЗ           КПЕВЕВ (А)           ИОИВЕВ ОБ (А)					×						Date: 0 / 4/ 4 9	Date:	umer Date:	Time:	TMF.	driver buizeus
f Chain of Cust		TRA TECH 0 N. Big Spring St. land, Texas 79705	682-4559 • Fax (432) 682-3946	TKC TANAGER: TKC TANAGER	3 / Ina 173	1 ra 0, ン・・ SAMPLE IDENTIFICATION	' <i>ڌ</i> ،5'	41-44,5'	5,5.5'	6-1.5'	- 1-0	ا کرا جا	2,2,5	3'-3,5'	4-4.5'	, 51-55'	20 Carton Bri (standul)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	DATE	TPH secred 5,000 mg/kg. run
s Request o			(432)	SIT	PROJECT NAME:	TH MA THTAM AMOO BARD	5 X A+-2	2.44	AH-2	2-+14 /	AH-3	<u>Ан-3</u>	AH-3	/ AH-3	AH-3	V 4 AH-3	Time: 12	Date:	Date:	לנינא גמווון. אנינא אוווון	STATE 7V ZIP.	CEIVED: REMARK
Analysi				CLIENT NAME: St Morus	PROJECT NO.: 1 1141-6406305	LABI.D. DATE NUMBER ZWS	211 loolo 1%	100	<u></u>	1 60a	(010)	119	/ CID	613	614	(o15 &		KELINGUISHED BY: (SIGNITIZED	RELINQUISHED BY: (Signature)	RECEIVING LABORATORY	CITY: Within C	SAMPLE CONDITION WHEN RE 27,4°C i ~70

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It tatel Office accords 50 ppm, run desper havizons

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# **Summary Report**

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

Report Date: November 5, 2009

Work Order: 9110402

Project Location:	Lea Co., NM
Project Name:	St. Mary/Inca 1 TB
Project Number:	114-6400305

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
213902	BH-1 8-9'	soil	2009-11-03	00:00	2009-11-04
213903	BH-1 10-11'	soil	2009-11-03	00:00	2009-11-04
213904	BH-1 15-16'	soil	2009-11-03	00:00	2009-11-04
213905	BH-1 20-21'	soil	2009-11-03	00:00	2009-11-04
213906	BH-1 25-26'	soil	2009-11-03	00:00	2009-11-04
213907	BH-1 30-31'	soil	2009-11-03	00:00	2009-11-04
213908	BH-1 40-41'	soil	2009-11-03	00:00	2009-11-04
213909	BH-1 50-51'	soil	2009-11-03	00:00	2009 - 11 - 04
213910	BH-1 60-61'	soil	2009-11-03	00:00	2009 - 11 - 04
213911	BH-2 10-11'	soil	2009-11-03	00:00	2009-11-04
213912	BH-2 15-16'	soil	2009-11-03	00:00	2009-11-04
213913	BH-2 20-21'	soil	2009-11-03	00:00	2009-11-04
213914	BH-2 30-31'	soil	2009-11-03	00:00	2009-11-04
213915	BH-2 40-41'	soil	2009-11-03	00:00	2009-11-04
213916	BH-2 50-51'	soil	2009-11-03	00:00	2009-11-04
213917	BH-3 10-11'	soil	2009-11-03	00:00	2009-11-04
213918	BH-3 15-16'	soil	2009-11-03	00:00	2009-11-04
213919	BH-3 20-21'	soil	2009-11-03	00:00	2009-11-04
213920	BH-3 30-31'	soil	2009-11-03	00:00	2009-11-04
213921	BH-3 40-41'	soil	2009-11-03	00:00	2009-11-04
213922	BH-3 50-51'	soil	2009-11-03	00:00	2009-11-04
213923	BH-3 60-61'	soil	2009-11-03	00:00	2009-11-04

#### Sample: 213902 - BH-1 8-9'

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continued ...

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Report Date: Nover	nber 5, 2009	Work Order: 9110402	Page	Number: 2 of 4
sample 213902 cont	inued			
Param	Flag	Result	Units	RL
Param	Flag	Result	Units	RL
Chloride		25000	mg/Kg	4.00
Sample: 213903 -	BH-1 10-11'			
Param	Flag	Result	Units	RL
Chloride		13500	mg/Kg	4.00
Sample: 213904 -	BH-1 15-16'	·		
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride	· · · · · · · · · · · · · · · · · · ·	11300	mg/Kg	4.00
Sample: 213905 -	BH-1 20-21'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		16500	mg/Kg	4.00
Sample: 213906 -	BH-1 25-26'			
Param	Flag	Result	Units	RL
Chloride	· · · · · · · · · · · · · · · · · · ·	14000	mg/Kg	4.00
Sample: 213907 -	BH-1 30-31'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		11000	mg/Kg	4.00
Sample: 213908 -	BH-1 40-41'			
Param	Flag	Result	Units	RL
Chloride	¥	7120	mg/Kg	4.00

### Sample: 213909 - BH-1 50-51'

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Report Date: Nove	mber 5, 2009	Work Order: 9110402	Page	Number: 3 of 4
D	DI	Dervik	TI:	nı
Chloride	Flag	2660	mg/Kg	<u> </u>
		2000		
Sample: 213910	- BH-1 60-61'	·		
Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4.00
Sample: 213911	- BH-2 10-11'			
Param	Flag	Result	Units	RL
Chloride		13100	mg/Kg	4.00
Sample: 213912	- BH-2 15-16'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		18600	mg/Kg	4.00
Sample: 213913	- BH-2 20-21'			
Param	Flag	$\mathbf{Result}$	Units	$\mathbf{RL}$
Chloride	<u>_</u>	17800	mg/Kg	4.00
Sample: 213914	- BH-2 30-31'		, ,	
Param	Flag	Result	Units	RL
Chloride	: 0	12200	mg/Kg	4.00
Sample: 213915	- BH-2 40-41'			
Param	Flag	Result	Units	RL
Chloride	g	11300	mg/Kg	4.00
Sample: 213916	- BH-2 50-51'			
Param	Flag	Result	Units	RL.
Chloride	~ ***o	<200	mg/Kg	4.00
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TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

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Report Date: November	: 5, 2009	Work Order: 9110402		Page Number: 4 of 4
Sample: 213917 - BH	I-3 10-11'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		15600	mg/Kg	4.00
Sample: 213918 - BE	I-3 15-16 <sup>,</sup>			
Param	Flag	$\mathbf{Result}$	Units	RL
Chloride		15700	mg/Kg	4.00
Sample: 213919 - BH	I-3 20-21'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride		15000	mg/Kg	4.00
Sample: 213920 - BE Param Chloride	I-3 30-31' Flag	Result 14500	Units mg/Kg	RL 4.00
Sample: 213921 - BH	I-3 40-41'			
Param	Flag	Result	Units	RL
Chloride		11600	mg/Kg	4.00
Sample: 213922 - BE	I-3 50-51'			
Param	$\mathbf{Flag}$	Result	Units	RL
Chloride		3780	mg/Kg	4.00
Sample: 213923 - BH	I-3 60-61'			
Param	Flag	Result	Units	$\mathbf{RL}$
Chloride	~	<200	mg/Kg	4.00

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,FAX 806 • 794 • 1293 5701 Aberdeen Avenue, Suite 9 Lubbock; lexas 79424 800+378+1296 806+794+1296+ 200 East Sunset Road, Suite E – Euboock, Iexis 79424 200 East Sunset Road, Suite E – LEI Paso, Texas 79322 5002 Basin Street, Suite A1 – Midland, Texas 79703 888+588+3443 915+585+3443 FAX 915+585+4944 FAX:432+689+6313 432 • 689 • 6301 6015'Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817 • 201 • 5260 E-Mail: lab@traceanalysis.com Certifications 237019 HUB: 1752439743100-86536 DBE: VN 20657 WBENC: NCTRCA WFWB38444Y0909 **NELAP** Certifications Lubbock: T104704219-08-TX El Paso: T104704221-08-TX Midland: T104704392-08-TX LELAP-02003 LELAP-02002

## Analytical and Quality Control Report

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

Report Date: November 5, 2009

Work Order: 9110402

Project Location: Lea Co., NM Project Name: St. Mary/Inca 1 TB Project Number: 114-6400305

Kansas E-10317

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
213902	BH-1 8-9'	soil	2009-11-03	00:00	2009-11-04
213903	BH-1 10-11'	soil	2009-11-03	00:00	2009-11-04
213904	BH-1 15-16'	soil	2009-11-03	00:00	2009-11-04
213905	BH-1 20-21'	soil	2009-11-03	00:00	2009-11-04
213906	BH-1 25-26'	soil	2009-11-03	00:00	2009-11-04
213907	BH-1 30-31'	soil	2009-11-03	00:00	2009-11-04
213908	BH-1 40-41'	soil	2009-11-03	00:00	2009-11-04
213909	BH-1 50-51'	soil	2009-11-03	00:00	2009-11-04
213910	BH-1 60-61'	soil	2009-11-03	00:00	2009-11-04
213911	BH-2 10-11'	soil	2009-11-03	00:00	2009-11-04

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			Date	Time	Date ·
Sample	Description	Matrix	Taken	Taken	Received
213912	BH-2 15-16'	soil	2009-11-03	00:00	2009-11-04
213913	BH-2 20-21'	soil	2009-11-03	00:00	2009-11-04
213914	BH-2 30-31'	soil	2009-11-03	00:00	2009-11-04
213915	BH-2 40-41'	soil	2009-11-03	00:00	2009-11-04
213916	BH-2 50-51'	soil	2009-11-03	00:00	2009-11-04
213917	BH-3 10-11'	soil	2009-11-03	00:00	2009 - 11 - 04
213918	BH-3 15-16'	soil	2009-11-03	00:00	2009-11-04
213919	BH-3 20-21'	soil	2009-11-03	00:00	2009-11-04
213920	BH-3 30-31'	soil	2009-11-03	00:00	2009-11-04
213921	BH-3 40-41'	soil	2009-11-03	00:00	2009-11-04
213922	BH-3 50-51'	soil	2009-11-03	00:00	2009-11-04
213923	BH-3 60-61'	soil	2009-11-03	00:00	2009-11-04

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

Michael about

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

#### Standard Flags

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

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# Case Narrative

Samples for project St. Mary/Inca 1 TB were received by TraccAnalysis, Inc. on 2009-11-04 and assigned to work order, 9110402. Samples for work order 9110402 were received intact at a temperature of 4.0 deg. C.

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

		Ргер	Ргер	QC	Analysis
Test	Method	$\operatorname{Batch}$	Date	$\operatorname{Batch}$	Date
Chloride (Titration)	SM 4500-Cl B	55523	2009-11-04 at 09:05	65008	2009-11-04 at 14:55
Chloride (Titration)	SM 4500-Cl B	55524	2009-11-04 at 09:06	65009	2009-11-04 at 14:57
Chloride (Titration)	SM 4500-Cl B	55525	2009-11-04 at 09:06	65010	2009-11-04 at 14:58

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 9110402 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 guality 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.

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# **Analytical Report**

### Sample: 213902 - BH-1 8-9'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 55523	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		25000	mg/Kg	100	4.00

### Sample: 213903 - BH-1 10-11'

.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		13500	ng/Kg	100	4.00

#### Sample: 213904 - BH-1 15-16'

Chloride		11300	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	$\mathbf{RL}$
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

### Sample: 213905 - BH-1 20-21'

Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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Report Date: November 5, 2009	Work Order: 9110402	Page Number: 5 of 13
114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

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#### sample 213905 continued ....

		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
		BL.			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		16500	mg/Kg	100	4.00

### Sample: 213906 - BH-1 25-26'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 55523	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		14000	mg/Kg	100	4.00

### Sample: 213907 - BH-1 30-31'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 55523	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		11000	mg/Kg	100	4.00

### Sample: 213908 - BH-1 40-41'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
		$\mathbf{RL}$			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride		7120	ng/Kg	100	4.00

Report Date: November 5, 2009 114-6400305		Work Order: 9110402 St. Mary/Inca 1 TB		Page Number: 6 of 13 Lea Co., NM	
Sample: 21	3909 - BH-1 50-51'	•			
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65008	Date Analyzed:	2009 - 11 - 04	Analyzed By:	$\mathbf{AR}$
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride	<del>_</del>	2660	mg/Kg	100	4.00
Sample: 21	<b>3910 - BH-1 60-61'</b>				
Analysis	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
OC Batch	65008	Date Analyzed	2009-11-04	Analyzed By:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter	Flag	$\mathbf{Result}$	Units	Dilution	$\mathbf{RL}$
Chloride		<200	mg/Kg	50	4.00
Samples 21	3011 - BH-2 10-11 <sup>3</sup>				

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#### Sample: 213911 - BH-2 10-11<sup>3</sup>

Chloride		13100	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	$\mathbf{RL}$
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

### Sample: 213912 - BH-2 15-16'

Chloride		18600	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55524	Sample Preparation	2009-11-04	Prepared By:	AR
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

Report Date: November 5, 2009	Work Order: 9110402	Page Number: 7 of 13
114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

### Sample: 213913 - BH-2 20-21'

Chloride	· · ·	17800	r.	ng/Kg	100	4.00
Parameter	Flag	RL Result	•	Units	Dilution	RL
Prep Batch:	55524	Sample Preparation: 2009-11		2009-11-04	Prepared By:	AR
QC Batch:	65009	Date Analyz	æd:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical M	lethod:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland					

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### Sample: 213914 - BH-2 30-31'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\operatorname{RL}$		,	
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		12200	mg/Kg	100	4.00

### Sample: 213915 - BH-2 40-41'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride	•	11300	mg/Kg	. 100	4.00

### Sample: 213916 - BH-2 50-51'

Chloride		<200	mg/Kg	50	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR.
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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Report Date: November 5, 2009 114-6400305		Work Order: 9 St. Mary/Inc	Page Number: 8 of 13 Lea Co., NM		
Sample: 21	3917 - BH-3 10-11'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter Flag		Result	Units	Dilution	$\mathbf{RL}$
Chloride		15600	mg/Kg	100	4.00
Laboratory: Analysis:	Midland Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QU Batch:	00009	Date Analyzed:	2009-11-04	Analyzed By:	
Prep Batch:	əəəz4	Sample Preparation:	2009-11-04	Prepared By:	AK
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		15700	mg/Kg	100	4.00
Sample: 21	3919 - BH-3 20-21'				

Chloride		15000	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A

### Sample: 213920 - BH-3 30-31'

.

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		14500	mg/Kg	100	4.00

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Report Date: November 5, 2009 114-6400305		Work Order: 9 St. Mary/Inca	Work Order: 9110402 St. Mary/Inca 1 TB		9 of 13 5., NM
Sample: 21	3921 - BH-3 40-41'			•	
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
<b>n</b> .		RL	<b>.</b> .	<b>D</b> .1	~ *
Parameter	Flag	Result	Units	Dilution	RL
Chloride		11600	mg/Kg	. 100	4.00
Sample: 21	3922 - BH-3 50-51'				
Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65010	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55525	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL ·			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		3780 1	ng/Kg	100	4.00
Sample: 21 Laboratory: Analysis: QC Batch: Prep Batch:	<b>3923 - BH-3 60-61'</b> Midland Chloride (Titration) 65010 55525	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
D /		RL	<b>TT 1</b> /		DI
Parameter	flag	Result	Units	Dilution	RL
Juloride		<200 1	ng/Kg	50	4.00
Method Bla	ank (1) QC Batch: 65008				
QC Batch:	65008	Date Analyzed: 2009-	±1-04	Analyzed By:	AR
Prep Batch:	55523	QC Preparation: 2009-	11-04	Prepared By:	AR
		MDL			
Parameter	Flag	Result		Units	$\mathbf{RL}$

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Report Date: November 5, 2009 114-6400305		Work Order: 9110402 St. Mary/Inca 1 TB				Page Number: 10 of 13 Lea Co., NM		
Method Bla	ank (1)	QC Batch: 65009						
QC Batch: Pre <u>p</u> Batch:	65009 55524		Date Analyzed: QC Preparation:	2009-11-04 2009-11-04			Analyzed B Prepared B	by: AR by: AR
			MI	DL				
Parameter Chloride		Flag	Res <2	ult .18		Units mg/Kg		<u>RL</u> 4
Method Bla	ank (1)	QC Batch: 65010						
QC Batch: Pre <u>p</u> Batch:	65010 55525		Date Analyzed: QC Preparation:	2009-11-04 2009-11-04			Analyzed B Prepared B	y: AR y: AR
			MI	DL		<b>TT</b> • (		DT .
<sup>2</sup> arameter		Flag	Res 2			Units		
Laboratory	Control	Spike (LCS-1)						
Laboratory QC Batch: Prep Batch:	<b>Control</b> 5 65008 55523	Spike (LCS-1)	Date Analyzed: QC Preparation:	2009-11-04 2009-11-04			Analyzed B Prepared B	iy: AR y: AR
Laboratory QC Batch: Prep Batch: Param	Control 8 65008 55523	Spike (LCS-1) L( Res	Date Analyzed: QC Preparation: CS sult Units	2009-11-04 2009-11-04 Dil.	Spike Amount	Matrix Result	Analyzed B Prepared B Rec.	y: AR y: AR Rec. Limit
Laboratory QC Batch: Prep Batch: Param Chloride	Control : 65008 55523	Spike (LCS-1) LC Res	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg	2009-11-04 2009-11-04 Dil. 1	Spike Amount 100	Matrix Result <2.18	Analyzed B Prepared B Rec. 101	y: AR y: AR Rec. Limit 85 - 115
Laboratory QC Batch: Prep Batch: Param Chloride Percent recov	Control 5 65008 55523 very is base	Spike (LCS-1) L( Res 1( ed on the spike result.	Date Analyzed: QC Preparation: CS Sult Units D1 mg/Kg RPD is based on t	2009-11-04 2009-11-04 Dil. 1 the spike and	Spike Amount 100 i spike dup	Matrix Result <2.18 plicate result.	Analyzed B Prepared B Rec. 101	y: AR y: AR Rec. Limit 85 - 115
Laboratory QC Batch: Prep Batch: Param Chloride Percent recov	Control 5 65008 55523 very is base	Spike (LCS-1) LC Res 10 ed on the spike result. LCSD Result	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil.	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount	Spike Amount 100 i spike dup Matrix Result	Matrix Result <2.18 plicate result. Rec. Li	Analyzed B Prepared B Rec. 101 Lec. mit RPD	iy: AR y: AR Rec. Limit 85 - 115 RPD Limit
Laboratory QC Batch: Prep Batch: Param Chloride Percent recov Param Chloride	Control 65008 55523 very is base	Spike (LCS-1) LC Res 10 ed on the spike result. LCSD Result 100	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100	Spike Amount 100 d spike du Matrix Result <2.18	Matrix Result <2.18 plicate result. Rec. Li 100 85	Analyzed B Prepared B Rec. 101 Lec. mit RPD - 115 1	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20
Laboratory QC Batch: Prep Batch: Param Chloride Percent recov Param Chloride Percent recov Laboratory QC Batch: Prep Batch:	Control 65008 55523 very is base very is base Control 2 65009 55524	Spike (LCS-1)	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1 RPD is based on t BRPD is based on t Date Analyzed: QC Preparation:	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04	Spike Amount 100 d spike dur Matrix Result <2.18 d spike dur	Matrix Result <2.18 plicate result. Rec. Li 100 85 plicate result.	Analyzed B Prepared B Rec. 101 ec. mit RPD - 115 1 Analyzed B Prepared B	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20
Laboratory QC Batch: Prep Batch: Prep Batch: Chloride Percent recov Param Chloride Percent recov Laboratory QC Batch: Prep Batch: Prep Batch:	Control 65008 55523 very is base very is base Control 3 65009 55524	Spike (LCS-1) LC Res If ed on the spike result. LCSD Result 100 ed on the spike result. Spike (LCS-1) LC Res LC	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1 RPD is based on t Date Analyzed: QC Preparation: CS sult Units	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04 2009-11-04 2009-11-04	Spike Amount 100 d spike dup Matrix Result <2.18 d spike dup Spike Amount	Matrix Result <2.18 plicate result. Rec. Li 100 85 plicate result. Matrix Result	Analyzed B Prepared B Rec. 101 ecc. mit RPD - 115 1 Analyzed B Prepared B Rec.	iy: AR y: AR Rec. Limit 85 - 115 RPD Limit 20 iy: AR y: AR y: AR Rec. Limit

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Report Date: November 5, 2009	Work Order: 9110402	Page Number: 11 of 13
114-6400305	St. Mary/Inca I TB	Lea Co., NM

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

	LCSD			Spike	Matrix		Rec.		$\mathbf{RPD}$
Param	$\mathbf{Result}$	Units	Dil.	Amount	Result	Rec.	$\operatorname{Limit}$	RPD	Limit
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	1	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:	65010	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55525	QC Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$

	LCS			Spike	Matrix		Rec.
Param	$\mathbf{Result}$	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$
Chloride	99.0	mg/Kg	1	100	<2.18	99	85 - 115

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

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

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

#### Matrix Spike (MS-1) Spiked Sample: 213911

QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55523	QC Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$

	MS			Spike	Matrix		Rec.
Param	Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$
Chloride	23600	mg/Kg	100	10000	13100	105	85 - 115

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

	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	$\mathbf{Limit}$
Chloride	23700	mg/Kg	100	10000	13100	106	85 - 115	0	20

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

#### Matrix Spike (MS-1) Spiked Sample: 213921

QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	QC Preparation:	2009-11-04	Prepared By:	AR

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Report Date: November 5, 2009			Work Order: 9110402 St. Mary/Ince 1 TB					Page Number: 12 of 13			
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			(C			Cuiles	Ма	+		Baa	
Dorom		IVI Dos	ເວ 	Inite	D:I	Amount	Ma Bo	urix mit R	00	Limit	
<u>Chlorida</u>				omis m/Kg	100	10000	110	600 1	06	85 - 115	
	· • •	.1 .1 .1		18/118	100	10000	1	1		00 - 110	
Percent reco	overy is based of	on the spike result.	RPD is b	ased on	the spike ar	id spike duj	plicate r	esult.			
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount	Result	Rec.	$\mathbf{Limit}$	RPD	Limit	
Chloride		22400	mg/Kg	100	10000	11600	108	85 - 115	1	20	
Percent reco	overy is based	on the spike result.	RPD is b	ased on	the spike ar	nd spike dur	olicate r	esult.			
	<b>.</b>				•-	•, •	-				
Matrix Sn	ika (MS-1)	Spiked Sample: 2	12022								
Matrix SP	ike (1015-1)	Spiked Sample, 2	10920								
QC Batch:	65010		Date Ana	alyzed:	2009-11-0	4		Ana	alyzed B	y: AR	
Prep Batch:	55525		QC Prep	aration:	2009-11-0	4		Pre	pared By	y: AR	
		м	C			Spiles	Мо	+		Dee	
Param		Ros	ເວ ານໄ+ ໄ	Inite	Бі	Amount	Ma Ro	urix sult R	00	Limit	
Chloride		102	200 m	ομι <u>s</u> 1σ/Κσ	100	10000			n2	$\frac{11111}{85 - 115}$	
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r ercent rect	overy is based o	on the spike result.	KED IS D	ased on	the spike ar	ta shike ant	pincare r	esuit.		•	
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
Chloride		10400	mg/Kg	100	10000	<218	104	85 - 115	2	20	
Percent reco	overy is based o	on the spike result.	RPD is b	ased on	the spike ar	nd spike dur	olicate r	esult.			
	·	••			•	•. •	-				
Standard (	$(\mathbf{ICV}_{-1})$										
Stanuaru (	(10 v-1)										
QC Batch:	65008		Date Ana	alyzed:	2009-11-04			Ana	alyzed By	y: AR	
								•			
			ICVs	IC	Vs	ICVs		Percent		_	
<b>D</b>		<b>TT T</b>	True	For	und	Percent	]	Recovery		Date	
Param	Flag	Units	Conc.		nc.	Recovery		Limits		nalyzed	
Unioride		mg/Kg	100		9.8	100		85 - 115	200	J9-11-04	
Standard (	(CCV-1)										
00.0											
QC Batch:	65008		Date Ana	alyzed:	2009-11-04			Ana	atyzed By	y: AR	
			CCVe	cr	We	CCVe		Parcont			
			CCVs True	CC For	CVs und	CCVs Percent	I	Percent Recovery		Date	
Param	Flag	Units	CCVs True Conc.	CC For Ca	CVs und onc.	CCVs Percent Recoverv	I	Percent Recovery Limits	Aı	Date nalvzed	

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Report Date 114-6400305	: November 8	5, 2009		Vork Order: 91 St. Mary/Inca	10402 1 TB	Page N	umber: 13 of Lea Co., N
Standard (1	(CV-1)					- -	
QC Batch:	65009		Date Anal	yzed: 2009-11	-04	Anal	yzed By: A
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyz
Chloride		mg/Kg	100	101	101	85 - 115	2009-11
Standard (C	CCV-1)						
QC Batch:	65009		Date Anal	iyzed: 2009-11	-04	Anal	yzed By: A
			CCVs	CCVs	CCVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyz
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11
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			True	Found	Percent	Recovery	Date
Param	Flag	Units	True Conc.	Found Conc.	Percent Recovery	Recovery Limits	Date Analyz
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Param Chloride Standard (O QC Batch:	<u>Flag</u> CCV-1) 65010	Units * mg/Kg	Date Anal CCVs True	Found Conc. 99.2 yzed: 2009-11 CCVs Found	Percent Recovery 99 -04 CCVs Percent	Recovery Limits 85 - 115 Anal Percent Recovery	Date Analyz 2009-11 yzed By: A Date
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Request of Chain of Custody Record         Advantage of the second of th	CONTACT: SAMPLE CONDITION WHEN RECEIVED	ADDRESS:	RELINQUISHED BY: (Signatura)	REDWOOISHED BY: (Signature)	111 Marcel	RELINGUIS (C) TBY: (Bageskip)	A teb	9a0 \	919	918	414	916	915	914	913	213912/45-07	ILAB I.D. NUMBER DATE TIME	CLIENT NAME: Mary			<u>Δnalveie</u>
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	Image: State of the state o	Win Terra Terra - Project Mana	Time:	Time:	Date:						NUMBER OF CC FILTERED (Y/N HCL HNO3 ICE NONE	ONTAINERS METHOD		odv Record

#### SITE INFORMATION

		Report	Type: Closure	e Report
General Site In	formation:			the second of the second s
Site:		Inca #1 Tank	Battery	
Company:	- · · · · · · · · · · · · · · · · · · ·	SM Energy C	ompany	
Section. Town	ship and Range	Section 19. T	18S, R32E	Unit Letter - D
Lease Number	<u> </u>			
County:		Lea County		
GPS:		32.73774° N.	103.81370° W	
Surface Owner	r:	Federal		
Mineral Owner	· ·	WATERG	2401	
Directions:		From the inters	ection of Hwy 82 and Sh	ugart Rd (Loco Hills), go south on Shugart Rd exactly 4
		miles. Turn to road ends. Tur	the Southeast on a calich in onto the road to the no	ne road and travel southeast for another 4 miles until the ortheast and travel approximatly 1.1 miles to the Geronim
		and travel 0.4 r	on Station. Take the callo niles. Turn east on callo	che road on the east side of the station to the north east he road and travel 0.15 miles to the location.
Release Data:	an an the state of t			
Date Released:		9/23/2009		
Type Release:		Produced Wa	ter	- 
Source of Conta	amination:	3" Polyethyler	transition	·····
Fluid Released:	• 	50 bbls		
Fluids Recovere	ed:	0 bbls		
Official Comm	unication:	<u>terne de la composition de la</u>		
Name:	Chad McNeely			Aaron Hale
Company:	SM Energy Com	pany		Tetra Tech
Address	3300 N A St # 7-1	200		1910 N Big Spring
RO Boy				
<u>P.U. B0x</u>				
	Midland, Texas			Midland, Texas
Phone number:	(432) 688-3124			(432) 682-4559
Fax:			_	
Email:	cmcneely@sm-	energy.com		aaron.hale@tetratech.com
Ranking Criter	ia 👘			
Depth to Ground	dwater:		Ranking Score	Site Data
<u>&lt;50 ft</u>			20	
50-99 ft			10	
>100 π.	·····			
WellHead Prote	tion:	<u>.                                    </u>	Banking Score	Site Date
Water Source <1	1.000 ft. Private <200	0 ft.	20	
Water Source >1	1,000 ft., Private >200	0 ft.	0	0
Surface Body of	f Water:		Ranking Score	Site Data
<200 ft.			20	
200 ft - 1,000 ft.		······	10	
>1,000 tt.				
	Total Ranking Sco	n <b>e:</b> e:		MAR 1 9 2012
				MUNN X V
		Acconte	ble Soil BRAL Imelle	n)
		Accepta	ble Soil RRAL (mg/k	g) <u>::}/</u> ∓DU
		Accepta Benzene	Total BTEX	g) TPH 5000

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HOBBS OCD

January 4, 2012

Mr. Geoffrey Leking

1625 N. French Drive

**Environmental Engineer Specialist** 

Oil Conservation Division. District 1

MAR 1 9 2012

RECEIVED

Hobbs, New Mexico 88240
Re: Closure Report for the SM Energy Company
Inca #1 Tank Battery,
Polyethylene Saltwater Transfer Line Release

Unit D, Section 19, Township 18 South, Range 32 East Lea County, New Mexico. (1RP- 09.10.2302)

#### Mr. Leking:

Tetra Tech Inc. (Tetra Tech) was contacted by SM Energy Company (SM Energy) to assess a polyethylene saltwater transfer line release at the Inca #1 Tank Battery located in Unit D, Section 19, Township 18 South, Range 32 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.73786°, W 103.81388°. The site location is shown on Figures 1 and 2.

#### Background

According to the State of New Mexico C-141 Initial Report, the leak was discovered on September 17, 2008. Approximately 50 barrels of produced water were released from a 3-inch poly line. No free fluids were recovered. The 3-inch poly line was repaired with new connections. The final C-141 is enclosed in Appendix A.

#### Hydrology

The New Mexico Office of the State Engineers (OSE) Website listed two water wells within 2 miles of the site. The closest well (identified by the OSE as CP 00896) did not have any information available. The second closest well (identified by the OSE as CP 00672) had a total depth of 540 feet and a depth to water of 460 feet. The Geology and Groundwater Conditions in Southern Lea County New Mexico (Report 6) showed one well Section 19 of Township 18 South and Range 33 East, with a reported depth to water of greater than 140 feet below ground surface (bgs). The New Mexico Oil Conservation Division (OCD) regional groundwater gradient map for Lea County shows the depth to groundwater in this section at approximately 225 to 250 feet bgs.

According to the Geology and Groundwater Conditions in Southern Lea County New Mexico (Report 6), the Santa Rosa Sandstone (Dockum Group) is present in the Western third of Lea County. The Santa Rosa Sandstone consists of fine to coarse grain sands with minor shale layers generally red in coloration.

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#### Regulatory

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

#### **Soil Assessment and Results**

On October 5, 2009, Tetra Tech personnel collected soils samples from up to 6.5 feet bgs utilizing a hand auger at three locations within the spiil area. The spill area measures approximately 60 feet by 120 feet. Soil sampling stopped in each location when auger refusal occurred. Soil samples were submitted for laboratory analysis of TPH by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The laboratory analytical data indicated that the soil samples did not have BTEX or TPH concentrations above their detection limits. Chloride concentrations did however exceed 1,000 mg/kg.

On November 3, 2009, Tetra Tech personnel remobilized to the site with a drilling rig to advance soil borings in the areas previously assessed with a hand auger. Three borings identified as BH-1, BH-2 and BH-3 were advanced to depths of 60 feet, 50 feet and 60 feet, respectively. Soil samples from the borings were submitted for laboratory analysis to evaluate the chloride concentration. The bottom sample in each boring did not exhibit chloride concentrations above the laboratory detection limits.

Referring to Table 1, all of the samples analyzed were below the RRAL for both BTEX and TPH. Analytical results indicate the maximum extent of chloride impact greater than 1,000 mg/kg extending to 50' (BH-1), 40' (BH-2) and 50' (BH-3). All sample locations had chloride concentrations that decreased with depth. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix B. The results of the sampling are summarized in Table 1. The borehole locations are shown on Figure 3.

#### Work Plan

A work plan dated May 5, 2011 was submitted and approved by the NMOCD.

#### **Remediation and Closure Request**

Tetra Tech personnel were onsite to supervise the approved remediation from August 25, 2011 through September 13, 2011. As approved by the work plan, ten feet was excavated from the spill area (Figure 4). Approximately 3,860 yards<sup>3</sup> were excavated and transported to Lea Land Inc., Hobbs, New Mexico.

Two confirmation samples (CS-NW and CS-E) were collected and submitted for laboratory analysis. The results of the sampling are summarized on Table 1. Referring

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to Table 1, CS-NE had chloride concentrations of 222 mg/kg and CS-E had 374 mg/kg. Based on these results the site was backfilled with clean material to approximately 4' bgs and a 40 mil liner was installed. The site was then backfilled with clean material to surface grade.

Based on the remediation activities performed at the site, SM Energy request closure of the site. If you require any additional information or have any questions or comments concerning this work plan, please call at (432) 682-4559.

Respectfully submitted, TETRA TECH, INC.

Aaron M. Hale Senior Project Manager

cc: Chad McNeely – SM Energy Company Don Riggs – SM Energy Company Mark Bondy – SM Energy Company Jim Amos – BLM



#### FIGURES

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Table 1 SM Energy Company

## Inca 1 Tank Battery

## Section 19, Township 18 South, Range 32 East LEA COUNTY, NEW MEXICO

		·	· · · ·	r			÷.,	÷	Π										
Chloride	(mg/kg)	2,060	2,070	5,760	10,900	11,100	19,700	27,400		25,000	13,500	11,300	16,500	14,000	11,000	7,120	2,660	<200	
Xylene	(mg/kg)	<0.01		5				°* ₹		•		•	•	-		-	•	4	
Ethlybenzene	(mg/kg)	<0.01	•	•							-	•		1	3		•	•	
Toluene	(mg/kg)	<0.01		•				3		•	T	I	•	•	r			4	
Benzene	(mg/kg)	<0.01 ~	•	مر، 7			۰			•			•		•	4	•	T	
	Total	<50.0		•	•	• • •	•			•	-	•	•	•	r	•		•	
TPH (mg/kg)	GRO			ł.,	•					•	•	-	I	•	•	4	1,		5
	DRO	<50.0			· · · · ·	1					•	•	•	1	E		-	,	
tatus	Removed	×	×	×	×	×	<b>X</b> .	×		×	×								
Soil S	In-Situ									1		×	×	×	×	×	×	×	
Sample	Depth (ft)	0-1	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5	6-6.5		8-9	10-11	15-16	20-21	25-26	30-31	40-40	50-51	60-61	
Date	Sampled	10/5/2009								11/3/2009									
Sample	ē	AH-1								BH-1									

Table 1

### SM Energy Company Inca 1 Tank Battery Section 19, Township 18 South, Range 32 East LEA COUNTY, NEW MEXICO

-		F	·	1			T	<u> </u>						1	
Chloride	(mg/kg)	4,530	4.930	8.060	12.800	12.200	16.000	23,400		13,100	18,600	17,800	12,200	11,300	<200
Xylene	(mg/kg)	<0.01	•			,	- - -				•	ŀ		•	
Ethlybenzene	(mg/kg)	<0.01	•	z	-					•	1	•		1	,
Toluene	(mg/kg)	<0.01	•	•	-			•		•	•			•	•
Benzene	(mg/kg)	<0.01	•					-		,		•	1	,	
	Total	<50.0		•	•		•	i		•	•	•	•		
FPH (mg/kg)	GRO	<1.0			-				,	•	-	•	•	•	ŀ
•	DRO	<50.0	•			•	•			•	,	•	•	•	1
tatus	Removed	×	×	X.	×	×	×	×	;	×					
SoilS	In-Situ						-				×	×	х	×	×
Sample	Depth (ft)	0-1	1-1.5	2-2.5	3-3.5	4-4.5	5-5.5	6-6.5			15-16	20-21	30-31	40-40	50-51
Date	Sampled	10/5/2009							1 100000	R002/2/1		-			
Sample	₽	AH-2							0 10	2-H0					

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Table 1

SM Energy Company

Inca 1 Tank Battery

Section 19, Township 18 South, Range 32 East LEA COUNTY, NEW MEXICO

Sample	Date	Sample	SoilS	tatus		TPH (mg/kg)		Benzene	Toluene	Ethiybenzene	Xylene	Chloride
Q	Sampled	Depth (ft)	In-Situ	Removed	DRO	GRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
AH-3	10/5/2009	0-1-	رية ر	· X	52.0	<1.0	52.0	<0.01	<0.01	<0.01	<0.01	4,230
		1-1.5		×	• •	,	•		•			10,100
		2-2.5		×		•	ь	2 4 7	•		4 1 4 1 4 2	6,930
		3-3.5		×					T I	۰ د ۱	с. 	10,200
		4-4.5	ţ	×		•	•		-	-	•	11,400
		5-5.5		, , , ,	•					•	•	29,200
BH-3	11/3/2009	10-11	-	×								15,600
		15-16	×				,	-	•			15,700
		20-21	×		•	F	•		•	1	•	15,000
		30-31	×				•		4	-	•	14,500
		40-40	×			1		,	ſ	•	•	11,600
		50-51	×		Ŧ	,	•	,		•	•	3,780
		60-61	×					1	•	1	•	<200
EN SC	R/20/2011		×		,							222
CS-E	8/31/2011		×					•	1			374
	Not Analyzed											

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Excavated Material .40 Mil Liner

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**APPENDIX A** 

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6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5802 Basin Street, Suite A1 6015 Harris Parkway, Suite 110

Lubbock, Texas 79424 800•378•1296 El Paso, Texas 79922 888•588•3443 Midland, Texas 79703 Ft. Worth, Texas 76132 E-Mail: lab@traceanalysis.com

800+378+1296 806+794+1296 888+588+3443 915+585+3443 432+689+6301 817+201+5260

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

**WBENC:** 237019

HUB:1752439743100-86536NCTRCAWFWB38444Y0909

Certifications

DBE: VN 20657

#### **NELAP** Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 El Paso: T104704221-08-TX LELAP-02002 Midland: T104704392-08-TX

#### Analytical and Quality Control Report

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

Report Date: October 12, 2009

Work Order: 9100524

Project Location:Lea Co., NMProject Name:St. Mary/Inca 1 TBProject Number:114-6400305

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
211596	· AH-1 0-1'	soil	2009-10-05	00:00	2009-10-05
211597	AH-1 1-1.5'	soil	2009-10-05	00:00	2009-10-05
211598	AH-1 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211599	AH-1 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
<b>2116</b> 00	AH-1 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211601	AH-1 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211602	AH-1 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211603	AH-2 0-1'	soil	2009-10-05	00:00	2009-10-05
211604	AH-2 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211605	AH-2 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
			Date	Time	Date
--------	--------------	--------	------------	-------	------------
Sample	Description	Matrix	Taken	Taken	Received
211606	AH-2 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211607	AH-2 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211608	AH-2 5'-5.5'	soil	2009-10-05	00:00	2009-10-05
211609	AH-2 6'-6.5'	soil	2009-10-05	00:00	2009-10-05
211610	AH-3 0-1'	soil	2009-10-05	00:00	2009-10-05
211611	AH-3 1'-1.5'	soil	2009-10-05	00:00	2009-10-05
211612	AH-3 2'-2.5'	soil	2009-10-05	00:00	2009-10-05
211613	AH-3 3'-3.5'	soil	2009-10-05	00:00	2009-10-05
211614	AH-3 4'-4.5'	soil	2009-10-05	00:00	2009-10-05
211615	AH-3 5'-5.5'	soil	2009-10-05	00:00	2009-10-05

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

This report consists of a total of 20 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abel

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

#### Standard Flags

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

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## Case Narrative

Samples for project St. Mary/Inca 1 TB were received by TraceAnalysis, Inc. on 2009-10-05 and assigned to work order 9100524. Samples for work order 9100524 were received intact at a temperature of 27.4 deg. 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	54819	2009-10-05 at 16:00	64189	2009-10-05 at 17:01
Chloride (Titration)	SM 4500-Cl B	54853	2009-10-07 at 12:24	64315	2009-10-09 at 13:33
Chloride (Titration)	SM 4500-Cl B	54854	2009-10-07 at 12:24	64316	2009-10-09 at 13:34
tph dr0	Mod. 8015B	54818	2009-10-06 at 08:49	64188	2009-10-06 at 08:49
TPH GRO	S 8015B	54819	2009-10-05 at 16:00	64190	2009-10-05 at 17:29

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 9100524 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.

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# **Analytical Report**

## Sample: 211596 - AH-1 0-1'

Laboratory:	Midland					
Analysis:	BTEX		Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	64189		Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819		Sample Preparation:	2009-10-05	Prepared By:	AG
			RL			
Parameter		Flag	Result	Units	Dilution	$\mathbf{RL}$
Benzene			<0.0100	mg/Kg	1	0.0100
Toluene			< 0.0100	mg/Kg	1	0.0100

Ethylbenzene		<0.0100	)	mg/Kg		1	0.0100
Xylene		< 0.010	<u>)</u>	mg/Kg		1	0.0100
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.77	mg/Kg	1	2.00	88	64.4 - 111.2
4-Bromofluorobenzene (4-BFB)		1.86	mg/Kg	1	2.00	93	43.1 - 128.4

#### Sample: 211596 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		2060	mg/Kg	50	4.00

#### Sample: 211596 - AH-1 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO 64188 54818	Analytical Method: Date Analyzed: Sample Preparation:	Mod. 8015B 2009-10-06 2009-10-06	Prep Method: Analyzed By: Prepared By:	N/A kg kg
		RL			
Parameter	Flag	Result	Units	Dilution	RL
DRO		<50.0	mg/Kg	1	50.0

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB				Page Number: 5 of 20 Lea Co., NM		
Surrogate	Flag	Result	Units	Dilu	tion	Spike Amount	Percent Recovery	Rec Li	overy mits
n-Iriacontar	16	104	mg/Kg	1	<del>.</del>	100	104	13.2	- 219.3
Sample: 21	.1596 - AH-1 0-:	1'							
Laboratory:	Midland								
Analysis:	TPH GRO		Analytica	I Method:	S 8015B		Prep Me	ethod:	S 5035
QC Batch:	64190		Date Ana	lyzed:	2009-10-0	)5	Analyze	d By:	AG
Prep Batch:	54819		Sample P	reparation:	2009-10-0	15	Prepare	d By:	AG
<b>m</b>			RL		** •.				
Parameter	Flag	3	Result	**	Units		Dilution		RL
GRO			<1.00		mg/Kg	<u> </u>	1		1.00
-						Spike	Percent	Rec	overv
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Li	mits
Trifluorotolu	ene (TFT)		1.97	mg/Kg	1	2.00	98	65.3	- 109.9
4-Bromofluo	robenzene (4-BFB	)	1.98	mg/Kg	1	2.00	99	61.7 -	- 119.9
Sample: 21 Laboratory: Analysis: QC Batch: Prep Batch:	1 <b>597 - AH-1 1</b> -: Midland Chloride (Titrat 64315 54853	1.5' ion)	Analy Date Sampl	tical Metho Analyzed: le Preparati	d: SM 4. 2009- on: 2009-	500-Cl B 10-09 10-07	Prep I Analy Prepa	Method: zed By: red By:	N/A AR AR
			$\mathbf{RL}$						
Parameter	Flag	5	Result		Units		Dilution		$\mathbf{RL}$
Chloride	·····		2070		mg/Kg		100		4.00
Sample: 21	1598 - AH-1 2'-	2.5'							
Laboratory:	Midland								
Analysis:	Chloride (Titrat	ion)	Analy	tical Metho	d: SM 4	500-Cl B	Prep 2	Aethod:	N/A
QC Batch:	64315		Date .	Analyzed:	2009-	10-09	Analy	zed By:	$\mathbf{AR}$
Prep Batch:	54853		Sampl	e Preparati	on: 2009-	10-07	Prepa	red By:	AR.
			$\operatorname{RL}$						
Parameter	Flag	5	Result		Units		Dilution		$\mathbf{RL}$
Chloride			5760		mg/Kg		100		4.00

mg/Kg

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Report Date: October 12, 2009	Work Order: 9100524	Page Number: 6 of 20
114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

#### Sample: 211599 - AH-1 3'-3.5'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	AR.
		RL			
Parameter	$\mathbf{Flag}$	Result	Units	Dilution	$\mathbf{RL}$
Chloride		10900	mg/Kg	100	4.00

#### Sample: 211600 - AH-1 4'-4.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		11100	mg/Kg	100	4.00

### Sample: 211601 - AH-1 5'-5.5'

Chloride		19700	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	AR
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 211602 - AH-1 6'-6.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		27400	mg/Kg	100	4.00

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Report Date: October 12, 2009	Work Order: 9100524	Page Number: 7 of 20
114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

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### Sample: 211603 - AH-2 0-1'

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Laboratory:	Midland								
Analysis:	BTEX		Analytical	Method:	S 8021B		Prep Me	ethod:	S 5035
QC Batch:	64189		Date Anal	yzed:	2009-10-05		Analyze	d By:	AG
Prep Batch:	54819		Sample Pr	eparation:	2009-10-05		Prepared	l By:	AG
			RI	L					
Parameter Flag		$\mathbf{Result}$			Units	Dilution			$\mathbf{RL}$
Benzene			< 0.010	0	mg/Kg		1		0.0100
Toluene			< 0.010	0	mg/Kg		1		0.0100
Ethylbenzene	<b>;</b>		< 0.010	0	mg/Kg		1		0.0100
Xylene			< 0.010	0	mg/Kg		1		0.0100
					,	Spike	Percent	Re	coverv
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	L	imits
Trifluorotolue	ene (TFT)		1.81	mg/Kg	1	2.00	90	64.4	- 111.2
4-Bromofluor	obenzene (4-BFB)		1.88	mg/Kg	1	2.00	94	43.1	- 128.4

### Sample: 211603 - AH-2 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64315 54853	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flag	RL Besult	Units	Dilution	ΒL
Chloride		4530 1	ng/Kg	100	4.00

## Sample: 211603 - AH-2 0-1'

Laboratory:	Midland						
Analysis:	TPH DRO		Analytical M	Analytical Method: Mod. 8015B			Method: N/A
QC Batch:	64188		Date Analyz	ed: 20	09-10-06	Anal	yzed By: kg
Prep Batch:	54818		Sample Prep	aration: 2009-10-06		Prepared By:	
			$\mathbf{RL}$				
Parameter	$\mathbf{Fla}_{\mathbf{f}}$	5	Result		Units	Dilution	RL
DRO			<50.0	r	ng/Kg	1	50.0
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontan	9	106	mg/Kg	1	100	106	13.2 - 219.3

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114-6400305	j		Work Order: 9100524 St. Mary/Inca 1 TB			. <u></u>	Page Number: 8 of 20 Lea Co., NM			
Sample: 21	1603 - AH-2 0-1'									
Laboratory:	Midland									
Analysis:	TPH GRO		Analytica	l Method:	S 8015B		Prep Me	thod:	S 5035	
QC Batch:	64190		Date Ana	lyzed:	2009-10-05		Analyze	d By: A	AG	
Prep Batch:	54819		Sample P:	reparation:	2009-10-05		Prepareo	1 By: .	AG	
			$\mathbf{RL}$							
Parameter	Flag		$\mathbf{Result}$		Units		Dilution		RL	
GRO	······································		<1.00		mg/Kg		1		1.00	
					· · · · · · · · · · · · · · · · · · ·	Spile	Paraont			
Surrogate		Flar	Regult	Unite	Dilution	Amount	Recovery	Lir	nite	
Trifluorotolu	ene (TFT)	1 105	2.02	mø/Kø	1	2.00	101	65.3 -	109	
4-Bromofluo	robenzene (4-BFB)		2.01	mg/Kg	1	2.00	100	61.7 -	119.0	
Sample: 21 Laboratory: Analysis: 2C Batch:	1604 - AH-2 1'-1.5' Midland Chloride (Titration) 64315		Analy Date .	tical Metho Analyzed:	d: SM 4500 2009-10-	-CI B	Prep M Analys	vlethod: zed By:	N/A AR	
Sample: 21 Laboratory: Analysis: QC Batch: Prep Batch:	1604 - AH-2 1'-1.5' Midland Chloride (Titration) 64315 54853		Analy Date . Sampl	tical Metho Analyzed: le Preparati	d: SM 4500 2009-10-0 on: 2009-10-0	-Cl B 09 07	Prep M Analy: Prepa	Method: zed By: red By:	N/A AR. AR.	
Sample: 21 Laboratory: Analysis: QC Batch: Prep Batch:	1604 - AH-2 1'-1.5' Midland Chloride (Titration) 64315 54853		Analy Date . Sampl RL	tical Metho Analyzed: le Preparati	d: SM 4500 2009-10-0 on: 2009-10-0	-Cl B 09 07	Prep M Analy: Prepar	Method: zed By: red By:	N/A AR. AR.	
Sample: 21 Laboratory: Analysis: QC Batch: Prep Batch: Param <u>eter</u>	<b>1604 - AH-2 1'-1.5'</b> Midland Chloride (Titration) 64315 54853 Flag		Analy Date Sampl RL Result	tical Metho Analyzed: le Preparati	d: SM 4500 2009-10-0 on: 2009-10-0 Units	-Cl B 09 07	Prep M Analy: Prepar Dilution	vlethod: zed By: red By:	N/A AR. AR. RL	

Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54853	Sample Preparation:	2009-10-07	Prepared By:	$\mathbf{AR}$
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		8060 r	ng/Kg	100	4.00

## Sample: 211606 - AH-2 3'-3.5'

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Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54854	Sample Preparation:	2009-10-07	Prepared By:	$\mathbf{AR}$

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Report Date: October 12, 2009 114-6400305		Work Order: 9 St. Mary/Inca	Work Order: 9100524 St. Mary/Inca 1 TB		
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		12800	mg/Kg	100	4.00
Sample: 21	1607 - AH-2 4'-4.5'				
Laboratory: Analysis: QC Batch: Prep Batch:	bry: Midland Chloride (Titration) Analytical Method: SM 4500 Date Analyzed: 2009-10- tch: 54854 Sample Preparation: 2009-10- DI		SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	Flao	RL Result	Units	Dilution	RI.
Chloride	1 1005	12200	mg/Kg	100	4.00
Analysis: QC Batch: Prep Batch:	Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Sample: 21	1609 - AH-2 6'-6.5'	16000	mg/Kg	100	4.00
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	<b>D</b> lag	RL	Tinita		БТ
<u>chloride</u>	r lag	23400	Units mg/Kg	Dilution 100	<u>KL</u>
		20100		100	4.00

### Sample: 211610 - AH-3 0-1'

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Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	64189	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	Sample Preparation:	2009-10-05	Prepared By:	AG

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Report Date: October 12, 2009 114-6400305			Work Order St. Mary/In	: 9100524 aca 1 TB	Page Number: 10 of 20 Lea Co., NM			
Parameter	Flag		R) Resul	L t	Units	I	Dilution	RL
Benzene	V		< 0.010	0	mg/Kg		1	0.0100
Toluene			<0.010	0	mg/Kg		1	0.0100
Ethylbenzene			< 0.010	0	mg/Kg		1	0.0100
Xylene		·	< 0.010	0	mg/Kg		1	0.0100
						Spike	Percent	Recovery
Surrogate		Flag	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.81	mg/Kg	1	2.00	90	64.4 - 111.2
4-Bromofluorobenzene (4	-BFB)		1.88	mg/Kg	1	2.00	94	43.1 - 128.4

### Sample: 211610 - AH-3 0-1'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-10-09 2009-10-07	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		4230	mg/Kg	100	4.00

## Sample: 211610 - AH-3 0-1'

Laboratory:MidlandAnalysis:TPH DROQC Batch:64188Prep Batch:54818			Analytical Method: Date Analyzed: Sample Preparation:		l. 8015B )-10-06 )-10-06	Prep Analy Prep	Method: N/A yzed By: kg ared By: kg	N/A kg kg
Parameter	F	lag	RL Result	Į	Jnits	Dilution	RL	
DRO	DRO		52.0	mą	g/Kg	1	50.0	)
Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	-
n-Triacontan	e	106	mg/Kg	1	100	106	13.2 - 219.3	5

#### Sample: 211610 - AH-3 0-1'

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	64190	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	Sample Preparation:	2009-10-05	Prepared By:	AG

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Report Date 114-6400305	: October 12, 2009		<u>,</u>	Work Order: 9 St. Mary/Inca	0100524 a 1 TB		Page Number: 11 of 20 Lea Co., NM			
			RL							
Parameter	Flag		Result		Units		Dilution		RL	
GRO			<1.00		mg/Kg		1		1.00	
Surrogate		Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Reco Lir	overy nits	
Trifluorotolu	ene (TFT)		2.02	mg/Kg	1	2.00	101	65.3 -	109.9	
4-Bromofluor	cobenzene (4-BFB)		1.99	mg/Kg	1	2.00	100	61.7 -	<u>119.9</u>	
Sample: 21	1611 - AH-3 1'-1.5'									
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 64316 54854		Analy Date J Sampl	tical Method: Analyzed: le Preparation	SM 4500 2009-10- : 2009-10-	0-Cl B 09 -07	Prep M Analy: Prepa	Method: zed By: red By:	N/A AR AR	
Parameter	Flag		RL Result		Units		Dilution		RL	
Chloride			10100	·····	mg/Kg		100		4.00	
Sample: 21 Laboratory: Analysis:	1612 - AH-3 2'-2.5' Midland Chloride (Titration)		Analy	tical Method-	SM 4500	I-CI B	Pren	vlethod.	N/A	
OC Batch:	64316		Date	Analyzed <sup>,</sup>	2009-10-	.09	A nalv	red By	AR	
Prep Batch:	54854		Sampl	e Preparation	: 2009-10-	07	Prepa	red By:	AR	
Dopositor	Flor		RL Reput		Unite		Dilution		DT	
Chlorida	rag		6930		ung/Kg		100		100	
				<b></b>	mg/ng		100		4.00	

## Sample: 211613 - AH-3 3'-3.5'

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Chloride	<u> </u>	10200	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	54854	Sample Preparation:	2009-10-07	Prepared By:	AR
QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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114-6400305	St. Mary/Inca 1 TB	Lea Co., NM

Sample: 211614 - AH-3 4'-4.5'

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Chloride		11400	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	54854	Sample Preparation:	2009-10-07	Prepared By:	AR
Analysis: OC Batch:	Chloride (Titration) 64316	Analytical Method: Date Analyzed:	SM 4500-Cl B 2009-10-09	Prep Method: Analyzed By:	N/A AR
Laboratory:	Midland				

### Sample: 211615 - AH-3 5'-5.5'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Ti 64316 54854	tration)	Analytical M Date Analyze Sample Prepa	ethod: Si ed: 20 aration: 20	M 4500-Cl B )09-10-09 )09-10-07	Prej Ana Prej	Method: N/A lyzed By: AR pared By: AR
2.10p 2000			FTFT			- • • •	
Parameter		Flag	RL Result	U	nits	Dilution	RL
Chloride		`	29200	mg/	Kg	100	4.00
Method Blar	ak (1)	QC Batch: 64188					
QC Batch:	64188		Date Analyzed:	2009-10-	06	Ar	alyzed By: kg
Prep Batch:	54818		QC Preparation	: 2009-10-	06	Pr	epared By: kg
Parameter DRO		Flag	M Re <5	IDL sult 5.86		Units mg/Kg	RL 50
					Spike	Percent	Recovery
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery	Limits
n-Triacontane		99.4	mg/Kg	1	100	99	13 - 178.5
<b>Method Blar</b> QC Batch: 0 Prep Batch: 5	nk (1) 64189 54819	QC Batch: 64189	Date Analyzed: QC Preparation:	2009-10-0 2009-10-0 MDL	)5 )5	Ana Pre	lyzed By: AG pared By: AG
Parameter		Flag		Result		Units	$\mathbf{RL}$
Benzene		· · · · · · · · · · · · · · · · · · ·	<0	.00410		mg/Kg	0.01

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method blank continued	!		1.0						
Dunumator	Flor		MI		T 3 \$	L		ΰī	
Tohuono	riag			uit	Uni	us V a		<u>RL</u>	
Ethylbenzene			< 0.002	240	mg/l	Ka		0.01	
Xylene			< 0.006	50	mg/l	Kg		0.01	
Composito	Flor	Rogalt	Ilnita	Dilution	Spike	Percent	Reco	overy	
Triffuorotoluene (TFT)	r lag	1.80	malKa	Diffusion	2 00		64 Q -	199.7	
4-Bromofluorobenzene	(4-BFB)	1.57	mg/Kg	1	2.00	30 78	43.9 -	121.9	
	()							****	
Method Blank (1)	QC Batch: 64190								
OC Batch: 64190		Date Ana	lvzed: 2	009-10-05		Analy	zed By:	AG	
Prep Batch: 54819		QC Prepa	ration: 2	009-10-05		Prepa	red By:	AG	
			MDT						
Parameter	Flag		MDL Result	<b>i</b>	Linit	e		RI.	
GRO	1 145		<0.396	·	mg/k	5 [o		1	
	w			· · · · · · · · · · · · · · · · · · ·		<u>.</u>		-	
<b>a</b>	<b>T</b> 11		<b>TT</b> •.		Spike	Percent	Rec	overy	
Surrogate	Flag	Result	Units	Dilution	Amount	Recovery		mits	
A.Bromofluorobenzene (	(4-BFR)	2.04	mg/Kg	1	2.00	102	62 -	120 5	
	(1010)				2.00		02 -	120.0	
Method Blank (1)	QC Batch: 64315								
QC Batch: 64315		Date Ana	lyzed: 20	009-10-09		Analy	zed By:	AR	
Prep Batch: 54853		QC Prepa	ration: 20	009-10-07		Prepa	red By:	$\mathbf{AR}$	
			MDI						
D	Floor		MDL Dogult		Hait	_		DT	
<u>Parameter</u>	r lag								
Chioride			2.10		ing/ K	· <u> </u>			
Method Blank (1)	QC Batch: 64316								
OC Batch: 64316		Date Ana	vzed: 20	009-10-09		Analy	zed By	AR	
Prep Batch: 54854		QC Prepa	ration: $2$	009-10-07		Prepa	red By:	AR	
-		-				-	-		
Destant	171.000		MDL Basult		TT '			ы	
Parameter Chlorido	riag	<b></b>	result			<u> </u>		KL 4	
			<2.18		mg/K	. <u>в</u>			

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Report Date: October 12 114-6400305	Work Order: 9100524 St. Mary/Inca 1 TB								Lea (	Co., NM	
Laboratory Control S	pike (LC	(S-1)									
QC Batch: 64188			Date	Analyzed	d: 2009-1	.0-06			Ana	alyzed B	y: kg
Prep Batch: 54818			QC P	reparatio	on: 2009-1	.0-06			Pre	pared B	y: kg
		LC	s			Spike	Ma	ıtrix		I	lec.
Param		Rest	ult	Units	Dil.	Amount	Re	sult	Rec.	L	imit
DRO		19	6	mg/Kg	1	250	<5	5.86	78	57.4	- 133.4
Percent recovery is based	on the sp	oike result.	. RPD is	s based o	on the spike	and spike d	luplicat	e resu	lt.		
_		LCSD			Spike	Matrix	_		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	I	Limit	RPD	Limit
DRO	_	190	mg/K	g 1	250	< 5.86	76	57.4	4 - 133.4	3	
Percent recovery is based	on the sp	oike result.	RPD is	s based o	on the spike	and spike d	luplicat	e resu	lt.		
	LCS	LCSD	)			Spike	LC	S	LCSD	F	lec.
Surrogate	$\mathbf{Result}$	Result	t 1	Units	Dil.	Amount	Ree	с.	Rec.	L	imit
Durrogace				117	1	100	10'	7	100	10 5	-146.7
n-Triacontane Laboratory Control S QC Batch: 64189 Prep Batch: 54819	107 pike (LC	102 S-1)	Date A QC Pr	ng/Kg Analyzed reparatio	1 2009-10 n: 2009-10	)-05 )-05		<u>,</u>	Anal Prep	yzed By ared By	: AG
n-Triacontane Laboratory Control S QC Batch: 64189 Prep Batch: 54819	107 pike (LC	<u>102</u> S-1)	Date A QC Pr	ng/Kg Analyzed reparatio	1 : 2009-10 n: 2009-10	)-05 )-05 Spike	10	trix	Anal Prep	yzed By ared By	: AG : AG
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param	107 pike (LC	102 S-1) LCS Resu	Date A QC Pr	nalyzed eparatio Units	1 : 2009-10 n: 2009-10 Dil.	)-05 )-05 Spike Amount	Ma Res	trix	Anal Prep Rec.	yzed By ared By H	: AG : AG Rec.
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param Benzene	107 pike (LC	102 S-1) LCS Resu 1.85	Date A QC Pr 5 blt	Analyzed reparatio <u>Units</u> ng/Kg	1 2009-10 n: 2009-10 Dil.	D-05 D-05 Spike <u>Amount</u> 2.00	Ma: 	trix sult 0410	Anal Prep Rec. 92	yzed By ared By I L 75.4	: AG AG Rec. imit - 115.7
n-Triacontane Laboratory Control S QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene	107 pike (LC	102 S-1) LCS Resu 1.85 1.82	Date A QC Pr S llt 2 n	Analyzed reparatio <u>Units</u> ng/Kg ng/Kg	1 2009-10 n: 2009-10 Dil. 1 1	D-05 D-05 Spike <u>Amount</u> 2.00 2.00	Ma: Res <0.0 <0.0	trix sult 0410 0310	Anal Prep Rec. 92 91	48.3 yzed By ared By H L 75.4 78.4	: AG : AG Rec. imit - 115.7 - 113.6
n-Triacontane Laboratory Control S QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene	107 pike (LC	102 S-1) LCS Resu 1.85 1.82 1.74	Date A QC Pr S lit 2 n 4 n	analyzed eparatio <u>Units</u> ng/Kg ng/Kg	1 2009-10 n: 2009-10 Dil. 1 1 1	2-05 D-05 Spike <u>Amount</u> 2.00 2.00 2.00	Ma: Res <0.0 <0.0 <0.0	trix sult 0410 0310 0240	Anal Prep Rec. 92 91 87	48.5 yzed By ared By I L 75.4 78.4 78.4 76 -	: AG : AG Mec. : : : : : : : : : : : : : : : : : : :
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene	107 pike (LC	102 S-1) LCS Resu 1.85 1.82 1.74 5.24	Date A QC Pr S llt 2 m 4 m	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg ng/Kg	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1	D-05 D-05 Spike <u>Amount</u> 2.00 2.00 2.00 6.00	Ma: Res <0.0 <0.0 <0.0 <0.0	trix sult 0410 0310 0240 0650	Anal Prep Rec. 92 91 87 87	48.3 yzed By ared By I L 75.4 78.4 76 - 76.9	: AG : AG : AG : imit - 115.7 - 113.6 114.2 - 113.6
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 vike result.	Date A QC Pr S llt 5 n 4 n RPD is	Analyzed eparatio Units ng/Kg ng/Kg ng/Kg ng/Kg ng/Kg	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 0 the spike	2-05 )-05 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 and spike d	Ma: Res <0.0 <0.0 <0.0 <0.0 luplicat	trix sult 0410 0310 0240 0650 e rcsu	Anal Prep Rec. 92 91 87 87 87 11t.	48.3 yzed By ared By I <u>L</u> 75.4 78.4 76 - 76.9	: AG : AG : AG : imit - 115.7 - 113.6 114.2 - 113.6
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 vike result. LCSD	Date A QC Pr G lit n A RPD is	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg ng/Kg s based o	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 0 the spike Spike	2-05 D-05 D-05 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 e and spike d Matrix	Ma Res <0.0 <0.0 <0.0 <0.0 luplicat	trix sult 0410 0310 0240 0650 e resu	Anal Prep <u>Rec.</u> 92 91 87 87 lt. Rec.	48.3 yzed By ared By I <u>L</u> 75.4 78.4 76.9	: AG AG ec. imit - 115.7 - 113.6 114.2 - 113.6 RPD
n-Triacontane         Laboratory Control SI         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 bike result. LCSD Result	Date A QC Pr G llt RPD is Units	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg s based c Dil.	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 0n the spike Spike Amount	2-05 05 Spike <u>Amount</u> 2.00 2.00 2.00 6.00 and spike d Matrix Result	Ma: Res <0.0 <0.0 <0.0 <0.0 luplicat	trix sult 0410 0310 0240 0650 e rcsu	Anal Prep Rec. 92 91 87 87 	48.3 yzed By ared By I L 75.4 76.4 76.9 RPD	: AG : AG : AG : 115.7 - 113.6 114.2 - 113.6 RPD Limit
n-Triacontane Laboratory Control Sp QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzene Toluene	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 bike result. LCSD Result 1.87 1.83	Date A QC Pr G llt n RPD is Units mg/Kg	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg s based o Dil. 1	1 2009-10 n: 2009-10 <u>Dil.</u> 1 1 1 1 1 200 2.00 2.00	2-05 05 Spike Amount 2.00 2.00 2.00 6.00 and spike d Matrix Result <0.00410 <0.00310	Mat Res <0.0 <0.0 <0.0 luplicat Rec. 94	trix sult 0410 0310 0650 e resu 75.4	Anal Prep Rec. 92 91 87 87 It. Rec. Limit 4 - 115.7 4 113.6	48.3 yzed By ared By I 75.4 75.4 76.9 RPD 1 0	: AG : AG : AG : imit - 115.7 - 113.6 114.2 - 113.6 RPD Limit 20 20
n-Triacontane         Laboratory Control S         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Toluene         Ethylbenzene         Toluene         Ethylbenzene         Toluene         Ethylbenzene	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 bike result. LCSD Result 1.87 1.83 1.75	Date A QC Pr G lit S nt M RPD is Mg/Kg mg/Kg mg/Kg	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg s based o Dil. 1 1 1	1 2009-10 n: 2009-10 <u>Dil.</u> 1 1 1 1 1 2 0 the spike <u>Amount</u> 2.00 2.00 2.00	2-05 D-05 D-05 Spike Amount 2.00 2.00 2.00 6.00 e and spike d Matrix Result <0.00410 <0.00310 <0.00240	Ma Res <0.0 <0.0 <0.0 <0.0 luplicat Rec. 94 92 88	trix sult 0410 0310 0240 0650 e resu 75.4 78.4 78.4	Anal Prep Rec. 92 91 87 87 lt. Rec. Limit 4 - 115.7 4 - 113.6 - 114 2	48.3 yzed By ared By I 75.4 78.4 76.9 76.9 1 0 1	: AG AG ec. imit - 115.7 - 113.6 114.2 - 113.6 RPD Limit 20 20 20
n-Triacontane         Laboratory Control S         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Xylene         Param         Benzene         Xylene         Param         Benzene         Xylene	107 pike (LC	102 S-1) S-1) LCS Resul 1.85 1.82 1.74 5.24 sike result. LCSD Result 1.87 1.83 1.75 5.33	Date A QC Pr QC Pr S dlt n 4 n RPD is mg/Kg mg/Kg mg/Kg mg/Kg	Analyzed reparatio units ng/Kg ng/Kg ng/Kg g based o Dil. 1 1 1 1 1	1 2009-10 n: 2009-10 <u>Dil.</u> 1 1 1 1 1 0n the spike <u>Amount</u> 2.00 2.00 2.00 6.00	2-05 D-05 D-05 Spike Amount 2.00 2.00 2.00 6.00 e and spike d Matrix Result <0.00410 <0.00310 <0.00240 <0.00650	Ma: <u>Res</u> <0.0 <0.0 <0.0 <0.0 luplicat <u>Rec.</u> 94 92 88 89	trix sult 0410 0310 0240 0650 e resu 75.4 78.4 76.5	Anal Prep 92 91 87 87 It. Rec. Limit 4 - 115.7 4 - 113.6 - 114.2 9 - 113.6	48.3 yzed By ared By I 75.4 78.4 76.9 76.9 RPD 1 0 1 2	: AG : AG : AG : imit - 115.7 - 113.6 114.2 - 113.6 I14.2 - 113.6 RPD Limit 20 20 20 20 20 20
Initiogate         n-Triacontane         Laboratory Control Sp         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Xylene         Param         Benzene         Xylene         Percent recovery is based         Param	107 pike (LC on the sp on the sp	102 S-1) S-1) LCS Resul 1.85 1.82 1.74 5.24 bike result. LCSD Result 1.87 1.83 1.75 5.33 ike result.	Date A QC Pr G C Pr S dlt n A RPD is mg/Kg mg/Kg mg/Kg mg/Kg RPD is	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg g based o Dil. 1 1 1 1 1 1 1 5 based o	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 0n the spike Spike Amount 2.00 2.00 2.00 6.00 on the spike	2-05 D-05 D-05 Spike Amount 2.00 2.00 2.00 6.00 e and spike d Matrix Result <0.00410 <0.00240 <0.00650 and spike d	Ma: Res <0.0 <0.0 <0.0 <0.0 luplicat Rec. 94 92 88 89 luplicat	trix sult 0410 0310 0240 0650 e resu 75.4 78.4 76.5 e resu	Anal Prep Rec. 92 91 87 87 lt. Rec. Limit 4 - 115.7 4 - 113.6 - 114.2 9 - 113.6 lt.	48.3 yzed By ared By I 75.4 78.4 76.9 76.9 RPD 1 0 1 2	: AG : AG : AG : II5.7 - 113.6 114.2 - 113.6 I14.2 - 113.6 RPD Limit 20 20 20 20 20
n-Triacontane         Laboratory Control S         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Xylene         Percent recovery is based	107 pike (LC on the sp on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 bike result. LCSD Result 1.87 1.83 1.75 5.33 ike result. LCS	Date A QC Pr QC Pr S lit 5 m 4 m RPD is mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg S L(	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg obased o Dil. 1 1 1 1 1 1 1 1 5 based o CSD	1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 200 2.00 2.00 2.00 6.00 on the spike	2-05 D-05 D-05 Spike Amount 2.00 2.00 2.00 6.00 e and spike d Matrix Result <0.00410 <0.00240 <0.00650 and spike d Spi	Ma: Res <0.0 <0.0 <0.0 <0.0 luplicat Rec. 94 92 88 89 luplicat ike	trix 501t 0410 0310 0240 0650 e resu 75.4 78.4 76.5 76.5 e resu LCS	Anal Prep Rec. 92 91 87 87 lt. Rec. Limit 4 - 115.7 4 - 113.6 - 114.2 9 - 113.6 lt. LCSD	48.3 yzed By ared By I 75.4 78.4 76.9 76.9 RPD 1 0 1 2 F	: AG : AG : AG : imit - 115.7 - 113.6 114.2 - 113.6 I14.2 - 113.6 RPD Limit 20 20 20 20
n-Triacontane         Laboratory Control S         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Xylene         Percent recovery is based         Surrogate	107 pike (LC on the sp	102 LCS Resu 1.85 1.82 1.74 5.24 Sike result. LCSD Result 1.87 1.83 1.75 5.33 Sike result. LCS Result	Date A QC Pr QC Pr S dlt 5 m 4 m RPD is mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg cmg/Kg mg/Kg mg/Kg mg/Kg mg/Kg cmg/Kg mg/Kg cmg/Kg/Kg cmg/Kg	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg g based o Dil. 1 1 1 1 1 5 based o CSD esult	1           ::         2009-10           n:         2009-10           1         1           1         1           1         1           1         1           1         1           1         2.00           2.00         2.00           2.00         6.00           on the spike         Units	2-05 D-05 D-05 Spike Amount 2.00 2.00 2.00 6.00 e and spike d Matrix Result <0.00410 <0.00240 <0.00650 and spike d Spi Dil. Amo	$\frac{Mai}{Res}$ $<0.0$ $<0.0$ $<0.0$ $<0.0$ $luplicat$ $\frac{Rec.}{94}$ $92$ $88$ $89$ $luplicat$ $ike$ $bunt$	trix sult 0410 0310 0240 0650 e resu 75.4 78.4 76.5 e resu LCS Rec.	Anal Prep <u>Rec.</u> 92 91 87 87 lt. Rec. Limit 4 - 115.7 4 - 113.6 - 114.2 9 - 113.6 lt. LCSD Rec.	48.3 yzed By ared By I 75.4 78.4 76.9 76.9 RPD 1 0 1 2 F L	: AG : AG : AG : II5.7 - 113.6 114.2 - 113.6 I14.2 - 113.6 RPD Limit 20 20 20 20 20
Initiogate         n-Triacontane         Laboratory Control Sp         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Surrogate         Trifluorotoluene (TFT)	107 pike (LC on the sp	102 S-1) LCS Resu 1.85 1.82 1.74 5.24 bike result. LCSD Result 1.87 1.83 1.75 5.33 ike result. LCS Result. LCS Result	Date A QC Pr QC Pr S lit n RPD is mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg mg/Kg ng/Kg mg/Kg mg/Kg ng/Kg RPD is S LC lt Rate S 1	Analyzed reparatio Units ng/Kg ng/Kg ng/Kg ng/Kg based o Dil. 1 1 1 1 1 5 based o CSD esult .80	1           ::         2009-10           n:         2009-10           1         1           1         1           1         1           1         1           1         1           2.00         2.00           2.00         2.00           2.00         0.00           on the spike         Market           Units         mg/Kg	2-05 2-05 2-05 Spike Amount 2.00 2.00 2.00 2.00 2.00 6.00 and spike d Matrix Result <0.00410 <0.00240 <0.00240 <0.00240 <0.00240 and spike d Spi Dil. Amo 1 2.0	Ma: Res <0.0 <0.0 <0.0 <0.0 luplicat Rec. 94 92 88 89 luplicat ike punt 00	trix sult 0410 0310 0240 0650 e resu 75.4 76.4 76.5 e resu LCS Rec. 89	Anal Prep Rec. 92 91 87 87 1t. Rec. Limit 4 - 115.7 4 - 113.6 - 114.2 9 - 113.6 1t. LCSD Rec. 90	48.3 yzed By ared By I 75.4 78.4 76.9 RPD 1 0 1 2 F L 65 -	: AG : AG : AG : II5.7 - 113.6 114.2 - 113.6 114.2 - 113.6 Limit 20 20 20 20 20 20 20 20 20 20

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Report Date: October 12, 2009 114-6400305 Work Order: 9100524 St. Mary/Inca 1 TB

## Laboratory Control Spike (LCS-1)

QC Batch: 64190 Bron Batch: 54819	D	ate Analyze C Preparati	d: 2009-10	0-05 0-05		Anai Prov	yzed By: AG
Trep paten. 54615	مح	o i reparati	on. 2009-1	0-00		Tich	area by. AG
	LCS			Snike	Matrì	Y	Rec
Param	Result	Units	Dil.	Amount	Resul	t Rec.	Limit
GRO	17.1	mg/Kg	1	20.0	<0.39	6 86	52.5 - 114.3
Percent recovery is based on the s	pike result. R	PD is based	on the spike	e and spike d	uplicate r	esult.	
	LCSD		Spike	Matrix		Bec.	RPD
Param	Result 1	Units Dil	. Amount	Result	Rec.	Limit	RPD Limit
GRO	17.6 m	ng/Kg 1	20.0	< 0.396	88 ह	52.5 - 114.3	3 20
Percent recovery is based on the s	pike result. R	PD is based	on the spike	e and spike d	uplicate r	esult.	
	LCS	LCSD		Spi	ke L	CS LCSD	Rec.
Surrogate	Result	Result	Units	Dil. Amo	ount R	ec. Rec.	Limit
Trifluorotoluene (TFT)	2.02	2.03	mg/Kg	1 2.0	0 1	01 102	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.83	1.81	mg/Kg	1 2.0	0 9	2 90	64.1 - 127.4
Laboratory Control Spike (LC QC Batch: 64315 Prep Batch: 54853	CS-1) D Q	)ate Analyze )C Preparati	d: 2009-1 on: 2009-1	0-09 0-07		Ana Prep	lyzed By: AR bared By: AR
	LCS			Spike	Ма	trix	Rec.
Param	Result	Units	B Dil.	Amount	t Re	sult Re	c. Limit
Chloride	101	mg/K	g1	100	<2	2.18 10	1 85 - 115
Percent recovery is based on the s	pike result. R	PD is based	on the spike	e and spike d	uplicate r	esult.	
	LCSD		Spike	e Matrix		Rec.	RPD
Param	Result	Units D	il. Amoui	nt Result	Rec.	Limit	RPD Limit
Chloride	100 1	mg/Kg	l 100	<2.18	100	85 - 115	1 20
Percent recovery is based on the s	pike result. R	PD is based	on the spike	and spike d	uplicate r	esult.	
Laboratory Control Spike (LC	CS-1)						
QC Batch: 64316	D	ate Analvze	d: 2009-10	0-09		Anal	vzed By: AR
Prep Batch: 54854	- Q	C Preparati	on: 2009-10	0-07		Prep	ared By: AR
-		-				1	-
	LCS			Spike	Ма	trix	Rec.
Param	Result	: Units	. Dil.	Amount	t Re	sult Re	c. Limit
Chloride	99.1	mg/K	g <u>1</u>	100	<2	2.18 99	85 - 115

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

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Report Date: October 12, 2009 114-6400305 LCS			Work Order: 9100524 St. Mary/Inca 1 TB						Page Number: 16 of 20 Lea Co., NM		
Param Chloride		LCSD Result	Units	Dil g 1	Spike . Amour 100	Matrix at Result	: 	Rec. Limit 	RPD 1	RPD Limit 20	
Percent recovery is based	on the sr	jke result	RPD is	based o	n the enike	and spike d	unlicate	o rocult		20	
1 Creent recovery to based	on ene ap	ANG TODUIG	<b>I</b> (I D 15	Dascu O	n one shtre	and spike a	upnere	G 165(16.			
Matrix Spike (MS-1)	Spiked	Sample: 2	11151								
QC Batch: 64188 Prep Batch: 54818			Date A QC Pr	Analyzed eparatio	l: 2009-10 on: 2009-10	0-06 0-06		Ar Pr	alyzed B epared B	y: kg y: kg	
_		MS	5 -			Spike	Ma	trix	]	Rec.	
Param		Resu		Units		Amount	Res	sult Rec.	<u> </u>	imit	
DRO		220	) 1	ng/Kg	L	250	<5	.86 88	35.2	- 167.1	
Percent recovery is based	on the sp	ike result.	RPD is	based o	n the spike	and spike d	luplicate	e result.			
		MSD			Spike	Matrix		Rec.		RPD	
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
DRO		228	mg/Kg	1	250	< 5.86	91	35.2 - 167.1	4	20	
				1 1	- +1						
Percent recovery is based	on the sp	ike result.	RPD is	based o	n tne spike	and spike o	upncate	e resuit.			
Percent recovery is based	on the sp	ike result.	RPD is	based o	n tne spike	and spike o	upncat			-	
Percent recovery is based	on the sp MS Recult	oike result. MSD Bosult	RPD is	based o	n tnë spikë	Spike	M	S MSD	]	Rec.	
Percent recovery is based Surrogate n-Triacontane	on the sp MS Result	vike result. MSD Result	RPD is	Jnits	Dil.	Spike Amount	M M <u>Re</u>	s MSD c. Rec. 1 102	L 34 5	Rec. imit - 178 4	
Percent recovery is based Surrogate n-Triacontane	on the sp MS Result 101	vike result. MSD Result 102	RPD is	based o Jnits g/Kg	Dil.	Spike Amount 100	M M Re 10	S MSD c. <u>Rec.</u> 1 102	]  	Rec. .imit - 178.4	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1)	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2	RPD is t U m 11517	Jnits g/Kg	Dil.	Spike Amount 100	M Re 10	S MSD c. Rec. 1 102	1 1 34.5	Rec. .imit - 178.4	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) OC Batch: 64189	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2	RPD is t U 11517 Date A	Jnits g/Kg	Dil. 1 2009-10	Spike Amount 100	M Re 10	S MSD c. Rec. 1 102	l L 34.5	Rec. imit - 178.4 :: AG	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2	RPD is t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed:	Dil. 1 2009-10 n: 2009-10	And spike o Spike Amount 100 -05 -05	M Re 10	S MSD c. Rec. 1 102 Ana Pre	l L 34.5 alyzed By pared By	Rec. .imit - 178.4 : AG : AG	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2	RPD is t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed:	Dil. 1 2009-10 n: 2009-10	Spike Amount 100 -05 -05	M Re 10	S MSD c. Rec. 1 102 Ana Pre	l L 34.5 alyzed By pared By	Rec. imit - 178.4 : AG : AG	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2	RPD is t U m 11517 Date A QC Pre	Jnits Jnits g/Kg nalyzed:	Dil. 1 2009-10 n: 2009-10	Spike Amount 100 -05 -05 Spike	Mat	s MSD c. Rec. 1 102 Ana Pre	l L 34.5 alyzed By pared By	Rec. imit - 178.4 : AG : AG	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2 MS Besul	RPD is t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed: paration	Dil. <u>1</u> 2009-10 n: 2009-10 Dil.	Amount Spike Amount 100 -05 -05 Spike Amount	Mat Res	S MSD c. Rec. 1 102 Ana Pre rix nlt Rec.	I 234.5 alyzed By pared By I L	Rec. imit - 178.4 : AG : AG Rec. imit	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2 Sample: 2 MS Resul 1.90	t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed: paration Jnits g/Kg	Dil. 1 2009-10 n: 2009-10 Dil. 1	Amount 100 -05 -05 Spike Amount 2.00	Mat Res <0.00	S MSD c. Rec. 1 102 Ana Pre rix ult Rec. 2410 95	l 34.5 alyzed By pared By I L 57.7	Rec. <u>imit</u> - 178.4 - 178.4 - AG : AG Rec. <u>imit</u> - 140.7	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene	on the sp MS Result 101 Spiked	vike result. MSD Result 102 Sample: 2 MS Resul 1.90 1.87	t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed: eparation Jnits g/Kg g/Kg	Dil. 1 2009-10 n: 2009-10 Dil. 1 1	Spike Amount 100 -05 -05 Spike Amount 2.00 2.00	Mat Res <<0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix ult Rec. )410 95 0310 94	I 34.5 alyzed By pared By I L 57.7 53.4	Rec. imit - 178.4 - 178.4 - AG : AG Rec. imit - 140.7 - 146.6	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene	on the sp MS Result 101 Spiked	MSD Result 102 Sample: 2 MS Result 1.90 1.87 1.84	RPD is t U m 11517 Date A QC Pre	Jnits g/Kg nalyzed: paration Jnits g/Kg g/Kg g/Kg	Dil. 1 2009-10 n: 2009-10 Dil. 1 1 1 1	Amount Spike Amount 100 -05 -05 Spike Amount 2.00 2.00 2.00 2.00	Mat Res <0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix wilt Rec. 2410 95 0310 94 0240 92	1 234.5 234.5 234.5 234.5 234.5 237.7 237.7 237.4 62.1	Rec. imit - 178.4 - 178.4 - AG : AG Rec. imit - 140.7 - 146.6 - 141.6	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene	on the sp MS Result 101 Spiked	MSD Result 102 Sample: 2 MS Resul 1.90 1.87 1.84 5.64	t U m 11517 Date A QC Pre t U m m m	Jnits g/Kg nalyzed: paration Jnits g/Kg g/Kg g/Kg g/Kg	Dil. 1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 1	Spike Amount 100 -05 -05 Spike Amount 2.00 2.00 2.00 6.00	Mat Res <0.00 <0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix wilt Rec. 1410 95 0310 94 0240 92 0650 94	l 34.5 alyzed By pared By I <u>L</u> 57.7 53.4 62.1 61.2	Rec. imit - 178.4 - 178.4 - 178.4 - AG - AG - AG - 140.7 - 146.6 - 141.6 - 142.7	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based	on the sp MS Result 101 Spiked on the sp	MSD Result 102 Sample: 2 Sample: 2 MS Resul 1.90 1.87 1.84 5.64 ike result.	RPD is t U m 11517 Date A QC Pre lt U m m RPD is	Jnits g/Kg nalyzed: eparation Jnits g/Kg g/Kg g/Kg g/Kg g/Kg based o	Dil. 1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	Spike Amount 100 -05 -05 Spike Amount 2.00 2.00 2.00 6.00 and spike d	Mat Res <0.00 <0.00 <0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix ult Rec. 0410 95 0310 94 0240 92 0650 94 e result.	I 34.5 alyzed By pared By I 57.7 53.4 62.1 61.2	Rec. imit - 178.4 - 178.4 - AG - AG Rec. imit - 140.7 - 146.6 - 141.6 - 142.7	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based	on the sp MS Result 101 Spiked on the sp	MSD Result 102 Sample: 2 MS Result 1.90 1.87 1.84 5.64 ike result.	RPD is t U m 11517 Date A QC Pre t U m m m RPD is	Jnits g/Kg nalyzed: eparation g/Kg g/Kg g/Kg g/Kg g/Kg g/Kg g/Kg	Dil. 1 2009-10 a: 2009-10 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	Amount 100 -05 -05 -05 Spike Amount 2.00 2.00 2.00 6.00 and spike d	Mat Res <0.00 <0.00 <0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix ult Rec. 2410 95 0310 94 0240 92 0650 94 e result. Rec.	l 34.5 alyzed By pared By I 57.7 53.4 62.1 61.2	Rec. imit - 178.4 - 178.4 - 178.4 - AG : AG Rec. imit - 140.7 - 146.6 - 141.6 - 142.7 RPD	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param	on the sp MS Result 101 Spiked	MSD Result 102 Sample: 2 Sample: 2 MS Resul 1.90 1.87 1.84 5.64 ike result. MSD Result	RPD is t U 11517 Date A QC Pre t U m m RPD is Units	Jnits g/Kg nalyzed: eparation Jnits g/Kg g/Kg g/Kg g/Kg based o Dil.	Dil. 1 2009-10 a: 2009-10 bil. 1 1 1 1 1 1 1 1 1 1 1 1 1	Spike Amount 100 -05 -05 -05 Spike Amount 2.00 2.00 2.00 2.00 6.00 and spike d Matrix Result	Mat Res <0.00 <0.00 <0.00 <0.00 kuplicate Rec.	S MSD c. Rec. 1 102 Ana Pre rix ult Rec. 0410 95 0310 94 0240 92 0650 94 e result. Rec. Limit	l 34.5 alyzed By pared By I 57.7 53.4 62.1 61.2 RPD	Rec. imit - 178.4 - 178.4 - 178.4 - AG - AG - AG - 140.7 - 146.6 - 141.6 - 142.7 RPD Limit	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzenc	on the sp MS Result 101 Spiked on the sp	MSD Result 102 Sample: 2 Sample: 2 MS Resul 1.90 1.87 1.84 5.64 ike result. MSD Result 2.01	RPD is t U 11517 Date A QC Pre t U m m RPD is Units mg/Kg	Jnits g/Kg nalyzed: eparation Jnits g/Kg g/Kg g/Kg g/Kg based o Dil. 1	Dil. 1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 1 1 1 1 1 1 2 N the spike Spike Amount 2.00	Spike Amount 100 -05 -05 -05 Spike Amount 2.00 2.00 2.00 2.00 6.00 and spike d Matrix Result <0.00410	Mat <u>Res</u> <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00	S MSD c. Rec. 1 102 Ana Pre rix alt Rec. 0410 95 0310 94 0240 92 0650 94 e result. Rec. Limit 57.7 - 140.7	1 34.5 alyzed By pared By 1 57.7 53.4 62.1 61.2 RPD 6	Rec. imit - 178.4 - 178.4 - 178.4 - AG - AG - AG - 140.7 - 146.6 - 141.6 - 142.7 RPD Limit 20	
Percent recovery is based Surrogate n-Triacontane Matrix Spike (MS-1) QC Batch: 64189 Prep Batch: 54819 Param Benzene Toluene Ethylbenzene Xylene Percent recovery is based Param Benzenc Toluene	on the sp MS Result 101 Spiked on the sp	MSD Result 102 Sample: 2 MS Result 1.90 1.87 1.84 5.64 ike result. MSD Result 2.01 1.99	RPD is t U 11517 Date A QC Pre t U m m RPD is Units mg/Kg mg/Kg	Jnits Jnits g/Kg eparation Jnits g/Kg g/Kg g/Kg g/Kg g/Kg based o Dil. 1 1	Dil. 1 2009-10 n: 2009-10 Dil. 1 1 1 1 1 1 1 1 1 1 1 1 1	Spike Amount 100 -05 -05 -05 -05 Spike Amount 2.00 2.00 2.00 2.00 6.00 and spike d Matrix Result <0.00410 <0.00310	Mat <u>Res</u> <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 Muplicate	S MSD c. Rec. 1 102 Ana Pre rix alt Rec. 2410 95 0310 94 0240 92 0650 94 c result. Rec. Limit 57.7 - 140.7 53.4 - 146.6	1 234.5	Rec. imit - 178.4 - 178.4 - 178.4 - AG : AG : AG : AG : AG : AG : 140.7 - 146.6 - 141.6 - 142.7 RPD Limit 20 20	
Percent recovery is based          Surrogate         n-Triacontane         Matrix Spike (MS-1)         QC Batch:       64189         Prep Batch:       54819         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Toluene         Ethylbenzene         Xylene         Percent recovery is based         Param         Benzene         Toluene         Ethylbenzene         Yogata         Param         Benzene         Toluene         Ethylbenzene	on the sp MS Result 101 Spiked	MSD Result 102 Sample: 2 MS Result 1.90 1.87 1.84 5.64 ike result. MSD Result 2.01 1.99 1.97	RPD is t U 11517 Date A QC Pre- t U m m RPD is Units mg/Kg mg/Kg mg/Kg	Jnits g/Kg nalyzed: eparation Jnits g/Kg g/Kg g/Kg g/Kg based o Dil. 1 1 1	Dil. 1 2009-10 a: 2009-10 bil. 1 1 1 1 1 1 1 1 1 1 1 1 1	Amount 100 -05 -05 -05 Spike Amount 2.00 2.00 2.00 2.00 6.00 and spike d Matrix Result <0.00410 <0.00240	Mat Res <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 <0.00 0.00 0.00 0.00 0 0 00 0 0 0	S MSD c. Rec. 1 102 Ana Pre rix wilt Rec. 2410 95 0310 94 0240 92 0650 94 e result. Rec. Limit 57.7 - 140.7 53.4 - 146.6 62.1 - 141.6	H 1 34.5 34.5 alyzed By pared By I 57.7 53.4 62.1 61.2 RPD 6 6 7	Rec. imit - 178.4 - 178.4 - 178.4 - AG : AG Rec. imit - 140.7 - 146.6 - 141.6 - 142.7 RPD Limit 20 20 20 20	

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Report Date: October 12, 2009 114-6400305		Work St. M	: Order: 910 Mary/Inca 1	0524 TB			]	Page Ni	ımber: Lea (	17 of 20 Co., NM
Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amou	e nt.	MS Rec.	MSD Rec.	] L	Rec. .imit
Trifluorotoluene (TFT)	1.80	1.83	mg/Kg	1	2		90	92	62.7	- 119.6
4-Bromofluorobenzene (4-BFB)	1.96	1.96	mg/Kg	1	2		98	98	49.6	- 136.7
Matrix Spike (MS-1) Spiked	Sample: 211	517								
QC Batch: 64190 Prep Batch: 54819	ב ק	)ate Analyze ]C Preparati	d: 2009-1 on: 2009-1	.0-05 .0-05				Anal <u>:</u> Prepa	yzed By ared By	r: AG : AG
				~						~
D	MS Damalt	TT . '4 -	D'1	,5	pike	Mat		Π.		Rec.
CDO	17.6	Units		An	nount			Rec.	10	
GRO	17.0	mg/Kg	5		20.0	1.	.0	80	10	- 198.3
Percent recovery is based on the s	pike result. R	PD is based	on the spik	e and s	pike dup	licate	result.			
	MSD		Snike	М	atrix		Re	c		RPD
Param	Result	Units Dil	L. Amour	nt R	esult	Rec.	Lin	nit.	RPD	Limit
GRO	18.2 m	ng/Kg 1	20.0		1.6	83	10 - 1	98.3	3	20
Porcent recovery is based on the s	niko result R	PD is based	on the snik	o and e	niko dun	licato	rogult			
Tereent recovery is based on the s	pine result. It		on the shire	c and p	pire unb	ncate	rcaunt,			
	MS	MSD			Spil	ĸe	MS	MSI	)	Rec.
Surrogate	Result	Result	Units	Dil.	Amo	unt	Rec.	Rec		Limit
Trifluorotoluene (TFT)	2.01	2.05	mg/Kg	1	2	· -	100	102	65	.5 - 123
4-Bromofluorobenzene (4-BFB)	2.17	2.22	mg/Kg	1	2		108	111	58	.6 - 140
Matrix Spike (MS-1) Spiked	Sample: 2116	605								
QC Batch: 64315	D	ate Analyze	d: 2009-1	0-09				Anal	yzed By	AR
Prep Batch: 54853	Ç	C Preparati	on: 2009-1	0-07				Prepa	ared By	: AR
	MS			:	Spike	M	atrix			Rec.
Param	Result	Units	Dil.	A	mount	Re	esult	$\operatorname{Rec}$		Limit
Chloride	18700	mg/K	g 100		10000	8	060	106	i 8	35 - 115
Percent recovery is based on the sp	pike result. R	PD is based	on the spike	e and s	pike dup	licate	result.			
	MSD		Spike	e N	latrix		Re	ec.		RPD
Param	Result	Units Di	il. Amou	nt I	Result	Rec.	Lir	nit	RPD	Limit
Chloride	18800 г	ng/Kg 10	0 1000	0	8060	107	85 -	115	0	20
Percent recovery is based on the sp	pike result. R	PD is based	on the spike	e and s	pike dup	licate	result.			
Matrix Spike (MS-1) Spiked	Sample: 2116	615								
QC Batch: 64316	D	ate Analyze	d: 2009-1	0-09				Anal	yzed By	AR
Prep Batch: 54854	Q	C Preparati	on: 2009-1	0-07				Prepa	ared By	: AR

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Report Da 114-640030 	te: October 12, 05	2009	·····	Work Ord St. Mary	ler: 91005: /Inca 1 Tl	24 B		Page 1	Number Lea	18 of 20 Co., NM
		2	MS			Spike	Ma	atrix		Rec.
Param	· · · · ·	Re		Units		Amount	Re	sult R	ec.	Limit
Chloride			1400 n	ig/Kg	100	10000	29	200 1	12	85 - 115
Percent rec	overy is based o	on the spike result	t. RPD is b	ased on t	he spike a	nd spike dup	licate 1	esult.		
		MSD			Snike	Matrix		Rec.		RPD
Param		Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride		40600	mg/Kg	100	10000	29200	114	85 - 115	0	20
Percent rec	overv is based o	n the spike result	t. RPD is b	ased on t	he spike a	nd spike dur	licate r	esult.		
		· · · · ·				- <b>P</b> P				
Standard	(CCV-2)									
QC Batch:	64188		Date An	alyzed:	2009-10-06	6		Ar	alyzed	By: kg
			CCVs	CCA	I.e.	OCVs.		Percent		
			True	Four	ad	Percent	-	Recovery		Date
Param	Flag	Units	Conc.	Con	с.	Recovery		Limits	A	nalyzed
DRO	·Ÿ	mg/Kg	250	236		94		80 - 120	20	09-10-06
QC Batch:	64188		Date An	alyzed:	2009-10-06	3		Aı	alyzed	By: kg
			ĊĊVs	CCV	s	$_{-}$ CCVs		Percent		_
-		<b>TT</b> 1/	True	Four	ıd	Percent	-	Recovery		Date
Param	Flag	Units	Conc.	Con	<u>c.</u>	Recovery		Limits	A	nalyzed
DRO		mg/Kg	250	249		100		80 - 120	20	09-10-06
Standard	(CCV-3)									
QC Batch:	64189		Date Ana	alyzed: 2	2009-10-05			Ana	alyzed B	y: AG
			CCVs	С	CVs	CCVs		Percent		•
			True	Fe	ound	Percent		Recovery		Date
Param	Flag	Units	Conc.	C	onc.	Recovery		Limits	A	nalyzed
Benzene		mg/Kg	0.100	0.	0956	96		80 - 120	20	09-10-05
Toluene		mg/Kg	0.100	0.	0932	93		80 - 120	20	09-10-05
Ethylbenze	ne	mg/Kg	0.100	0.	0877	88		80 - 120	20	09-10-05
Xylene		mg/Kg	0.300	0	.205	88		80 - 120	20	09-10-05
Standard	(CCV-4)									
QC Batch:	64189	•	Date Ana	alyzed: 2	2009-10-05			Ana	ılyzed B	y: AG

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Report Date: October 12, 2009 114-6400305			Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 19 of 20 Lea Co., NM	
D	10	<b>TT</b> • 1	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Toluono		mg/Kg	0.100	0.0908	91	80 - 120	2009-10-05
Ethylbenze	ne	mg/Kg	0.100	0.0839	83	80 - 120	2009-10-05
Xylene		mg/Kg	0.300	0.252	84	80 - 120	2009-10-05
Standard	(CCV-2)						
QC Batch:	64190		Date Analyzed: 2009-10-05			Analyzed By: AG	
_		<b></b>	CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
	(CCV-3)						
QC Batch: 64190			Date Analyzed: 2009-10-05			Analyzed By: AG	
			$\rm CCVs$	CCVs	CCVs	Percent	
_		<b>**</b> •.	True 7	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		mg/Kg	1.00	1.04	104	80 - 120	2009-10-05
Standard	(ICV-1)						
QC Batch:	64315		Date Analyzed: 2009-10-09			Anal	yzed By: AR
			ICVs	ICVs	ICVs	Percent	
			True	Found	Percent	Recovery	Date
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-10-09
Standard	(CCV-1)						
QC Batch:	64315		Date Analyzed: 2009-10-09			Analyzed By: AR	
			CCVs True	CCVs	CCVs	Percent	
Daram	Flag	Unite	Conc	rouna	Percent	Limite	Date
Chlorido	riag	mø/Kø	100		00	85 _ 115	2000_10_00
			+00	55.0			2003-10-09

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Report Dat 114-640030	e: October 12 5	, 2009	W 5	Work Order: 9100524 St. Mary/Inca 1 TB			Page Number: 20 of 20 Lea Co., NM		
Standard	(ICV-1)								
QC Batch:	64316		Date Ana	lyzed: 2009-10	)-09	Anal	yzed By: AR		
			ICVs	ICVs	ICVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride	······································	mg/Kg	100	97.5	98	85 - 115	2009-10-09		
Standard (	(CCV-1)								
QC Batch:	64316		Date Anal	yzed: 2009-10	)-09	Anal	yzed By: AR		
			CCVs	CCVs	CCVs	Percent			
			True	Found	Percent	Recovery	Date		
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed		
Chloride		mg/Kg	100	102	102	85 - 115	2009-10-09		

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PAGE: 1 OF: 2	ANALYSIS REQUEST (Circle or Specify Method No.)	SC	; 270/625 270/625 270/625	ع دامینافع 240/82 08 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TCLP Voladie TCLP Semi V RCJ GC.MS Vol. 8 GC.MS Vol. 8 GC.MS Semi. Pest. 808/609 Genme Spec Genme Spec Alpha Beta (A PLM (Asbest Alpha Beta (A											V. (Print & Initial) Date: # 10/5/67	PPED/BY: (Circle) AIRBILL #: BUS	JVERENT OPS OTHER.	MUSH Character	Authorized: Yes No	Multim-stat 111. Wait may
		AL BA HE 20 CL BP HE 20 (EXF 10 C32)	2 Ba Cd 2 Ba Cd 2 Cd 2 Cd	00M	BTEX 8021B TPH 8270 RAH 8270 RCRA Metals RCRA Metals	XX							XX			SAMPLED	SAMPLE GI	HAND DE	<i>√</i>	, ≁ 	Straigh
Record			PRESERVATIVE METHOD		иоие ice ниоз нст ыглечер (J	×										Date: 10/5/0	Date: Time:	Date: Time:		IME:	hurizons
of Chain of Custody		<b>TRATECH</b> 10 N. Big Spring St. Iland, Texas 79705 ) 682–4559 • Fax (432) 682–3946	TE MANAGER: JK Tavarz	76 1 713	ارد رد مکس SAMPLE IDENTIFICATION		1-115	2'-7,5'	3'-3,5'	41.45'	51-5.5'	62.21	0 - 1	ک، ۱۔ ۱	2'- 2'5'	2.2.0 f REGERATO BY (Slovedura)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	RECEIVED BY: (Signature)	Date	TPH exiteds 5,000 mg/25, run oberput
equest o	C		.05	PROJECT NAME: /	EPAB EPAB	5 X AH-1	AH-1	)     A+-1	/ AH-1	AH -1	AH~1	AH-1	<u>Д                                    </u>	// // A+ -2	2-HY \$		Date: Time:	Dette: Time:	41	PHONE: ZIP:	REMA
Analysis H(			ENT NAME: St Marys	JECT NO.: ( F	NBER DATE TIME A	596 m/5 2	597 / / //	598 /	599	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(0)	609	(103)	1 / hog	leos by	NQUISHED BY: (Signature)	NOUISHED BY: (Signature)	NQUISHED BY: (Signature)	EIVING LABORATORY: 71		PLE CONDITION WHEN RECEIVED: 7.4 c intact

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It total ISTEX survers 50 ppm, run deoper however

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shirds
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It when

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

ş RUSH Charges Authorized: Results by: Rajor Anions/Cations, pH, TDS 500 AIRBILL #\_ Dafer OTHER (soteedaA) MJ9 Time: Circle or Specify Method No.) (nA) sies sright ANALYSIS REQUEST  $\overline{\prec}$ Cabinolido 809/808 .1294 809/0808 s.dOd 1 FETRA TECH CONTACT PERSON: GC.MS Semi. Vol. 8270/625 Ike Favores SUB SUB SAMPLE SHIPPED BY: (Cifcle) GC.MS Vol. 8240/8260/624 SAMPLED BY: (Print & Initial) ЮЯ HAND DELIVERED TCLP Semi Volatiles TCLP Volatiles TCLP Metals Ag As Ba Cd Vr Pd Hg Se FEDEX RCRA Metals Ag As Ba Cd Cr Pb Hg Se 0758 HA9 (HAL COOM STOS (EXT to C39) 2001XL × X C81508 X318 10/322 ٢ PRESERVATIVE METHOD **BNONE JOE** Time: Date: Time: Date: jate 9 SONH Time: run derper borizons TOH (N/A) DERET 1 ME REPLACE CONTRINERS (432) 682-4559 • Fax (432) 682-3946 RECEIVED BY: (Signature) RECEIVED BY: (Signature) SAMPLE IDENTIFICATION 14 TETRA TECH It TPH ALLEN SOUD my, eceived by (S RECOVED BY 1910 N. Big Spring St. Midland, Texas 79705 (13) 51279 えく かってみ 5,5.5 - 1.5 , . , . , . , 5, 2, 2 3-3,5 4-45 3'3,5' 4-4,5 ĩ DATE: SITE MANAGER: Tka tava Tria ž Merus REMARKS AH~ 3 <u>AH-3</u> 2-414 AH-2 M A1--19 2.44 AH-2 AH-3 AH-3 Å AH -PROJECT NAME: Time: Date: Data: Time: Dato: Time; L) PHONE 8¥£Ð ÷ × R リック いんなり SOMP Ś XIATAM STATE Trees SAMPLE CONDITION WHEN RECEIVED: TIME RELINGUISHED BY: (Signature) St Nows RELINQUISHED BY: (Signatur RELINQUISHED BY: (Signation RECEIVING LABORATORY: DATE 10/5 ADDRESS PHOTING 2 mZ 2050047-1-11 CLIENT NAME: PROJECT NO .: 211 606 tz S LAB I.D. NUMBER g G 613 وا ح ورہ ලීම <u>د</u> و <u>[</u>] CONTACT 7

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CANAR # 100/524

Analysis Request of Chain of Custody Record

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UNITRACEANALYSIS, INC.

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 Aberdeen Avenue, Suite 9
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 East Sunset Road, Suite E
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 5002
 Basin Street, Suite A1
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 6015
 Harris Parkway, Suite 110
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Lubbock, lexas 79424 800+378+1296 El Paso, Texas 79922 868+588+3443 Midland, Jexas 79703 Ft. Worth, Texas 76132 E-Mail: lab@traceanalysis.com

800+378+1296 806+754+1296 888+588+3443 915+585+3443 432+689+6301 817+201+5260

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

**WBENC:** 237019

HUB:1752439743100-86536NCTRCAWFWB38444Y0909

Certifications

DBE: VN 20657

## **NELAP** Certifications

Lubbock: T104704219-08-TX LELAP-02003 Kansas E-10317 El Paso: T104704221-08-TX LELAP-02002 Midland: T104704392-08-TX

## Analytical and Quality Control Report

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

Report Date: November 5, 2009

Work Order: 9110402

Project Location: Lea Co., NM Project Name: St. Mary/Inca 1 TB Project Number: 114-6400305

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
213902	BH-1 8-9'	soil	2009-11-03	00:00	2009-11-04
213903	BH-1 10-11'	soil	2009-11-03	00:00	2009-11-04
213904	BH-1 15-16'	soil	2009-11-03	00:00	2009-11-04
213905	BH-1 20-21'	soil	2009-11-03	00:00	2009-11-04
213906	BH-1 25-26'	soil	2009-11-03	00:00	2009-11-04
213907	BH-1 30-31'	soil	2009-11-03	00:00	2009-11-04
213908	BH-1 40-41'	soil	2009-11-03	00:00	2009-11-04
213909	BH-1 50-51'	soil	2009-11-03	00:00	2009-11-04
213910	BH-1 60-61'	soil	2009-11-03	00:00	2009-11-04
213911	BH-2 10-11'	soil	2009-11-03	00:00	2009-11-04

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			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
213912	BH-2 15-16'	soil	2009-11-03	00:00	2009-11-04
213913	BH-2 20-21'	soil	2009-11-03	00:00	2009-11-04
213914	BH-2 30-31'	soil	2009-11-03	00:00	2009-11-04
213915	BH-2 40-41'	soil	2009-11-03	00:00	2009-11-04
213916	BH-2 50-51'	soil	2009-11-03	00:00	2009-11-04
213917	BH-3 10-11'	soil	2009-11-03	00:00	2009-11-04
213918	BH-3 15-16'	soil	2009-11-03	00:00	2009-11-04
213919	BH-3 20-21'	soil	2009-11-03	00:00	2009-11-04
213920	BH-3 30-31'	soil	2009-11-03	00:00	2009-11-04
213921	BH-3 40-41'	soil	2009-11-03	00:00	2009-11-04
213922	BH-3 50-51'	soil	2009-11-03	00:00	2009-11-04
213923	BH-3 60-61'	soil	2009-11-03	00:00	2009-11-04

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

Michael abert

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

#### Standard Flags

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



## **Case Narrative**

Samples for project St. Mary/Inca 1 TB were received by TraceAnalysis, Inc. on 2009-11-04 and assigned to work order 9110402. Samples for work order 9110402 were received intact at a temperature of 4.0 deg. C.

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

		Prep	Prep	$\mathbf{QC}$	Analysis
Test	Method	Batch	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	55523	2009-11-04 at 09:05	65008	2009-11-04 at 14:55
Chloride (Titration)	SM 4500-Cl B	55524	2009-11-04 at 09:06	65009	2009-11-04 at 14:57
Chloride (Titration)	SM 4500-Cl B	55525	2009-11-04 at 09:06	65010	2009-11-04 at 14:58

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 9110402 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.

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## **Analytical Report**

#### Sample: 213902 - BH-1 8-9'

Chloride		25000	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 213903 - BH-1 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		13500	mg/Kg	100	4.00

#### Sample: 213904 - BH-1 15-16'

Chloride		11300	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55523	Sample Preparation:	200 <b>9-</b> 11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR.
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 213905 - BH-1 20-21'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

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#### sample 213905 continued ...

Parameter	Flag	RL Result	Units	Dilution Dilution 100	RL
Descenter	Flor	RL	TT - 14 -		DI
Parameter	F lag	Result	Units	Dilution	RL.
Chloride		16500	mg/Kg	100	4.00

### Sample: 213906 - BH-1 25-26'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 555 <b>23</b>	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		14000	mg/Kg	100	4.00

#### Sample: 213907 - BH-1 30-31'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 55523	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	RL
Chloride		11000	ng/Kg	100	4.00

#### Sample: 213908 - BH-1 40-41'

Chloride		7120	mg/Kg	100	4.00
Parameter	Flag	$\operatorname{RL}$ Result	Units	Dilution	RL
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR.
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

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#### Sample: 213909 - BH-1 50-51'

Chloride		2660	ng/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 213910 - BH-1 60-61'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65008 55523	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		<200	mg/Kg	50	4.00

#### Sample: 213911 - BH-2 10-11'

Chloride		13100	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR
QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 213912 - BH-2 15-16'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		18600	ng/Kg	100	4.00

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#### Sample: 213913 - BH-2 20-21'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		17800	mg/Kg	100	4.00

#### Sample: 213914 - BH-2 30-31'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		12200	mg/Kg	100	4.00

#### Sample: 213915 - BH-2 40-41'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		11300	mg/Kg	100	4.00

#### Sample: 213916 - BH-2 50-51'

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Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	$\mathbf{AR}$
		RT.			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		<200	mg/Kg	50	4.00

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#### Sample: 213917 - BH-3 10-11'

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55524	Sample Preparation:	2009-11-04	Prepared By:	AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		15600	mg/Kg	100	4.00

#### Sample: 213918 - BH-3 15-16'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		15700	ng/Kg	100	4.00

#### Sample: 213919 - BH-3 20-21'

Chloride		15000	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
Frep Datch:	00024	Sample i Teparation.	2009-11-04	r lepated by:	AIL
Drop Batch	55597	Sample Proparation:	2000 11 04	Propured By:	ΔR
QC Batch:	65009	Date Analyzed:	2009-11-04	Analyzed By:	$\mathbf{AR}$
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
Laboratory:	Midland				

#### Sample: 213920 - BH-3 30-31'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65009 55524	Analytical Method: Date Analyzed: Sample Preparation:	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
_		RL	** •		
Parameter	Flag	Result	Units	Dilution	RL
Chloride		14500 1	ng/Kg	100	4.00

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Sample: 213921 - BH-3 40-41'

Chloride		11600	mg/Kg	100	4.00
Parameter	Flag	RL Result	Units	Dilution	RL
QC Batch: Prep Batch:	65009 55524	Date Analyzed: Sample Preparation:	2009-11-04 2009-11-04	Analyzed By: Prepared By:	AR AR
Laboratory: Analysis:	Midland Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A

#### Sample: 213922 - BH-3 50-51'

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 65010 55525	Analytical Method: Date Analyzed: Sample Preparation	SM 4500-Cl B 2009-11-04 2009-11-04	Prep Method: Analyzed By: Prepared By:	N/A AR AR
		RL			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		3780	mg/Kg	100	4.00

#### Sample: 213923 - BH-3 60-61'

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Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	65010	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55525	Sample Preparation:	2009-11-04	Prepared By:	AR
-		_			
		$\mathbf{RL}$			
Parameter	Flag	Result	Units	Dilution	$\mathbf{RL}$
Chloride		<200	mg/Kg	50	4.00

### Method Blank (1) QC Batch: 65008

QC Batch:	65008	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55523	QC Preparation:	2009-11-04	Prepared By:	AR.

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

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Method Blank (1)	QC Batch: 65009										
QC Batch: 65009 Prep Batch: 55524		Date Analyzed: QC Preparation:	2009-11-04 2009-11-04				Analyzed B Prepared B	y: AR y: AR			
		M	DL								
Parameter	Flag	Res	ult		Unit	s		RL			
Chloride	<b></b>	<2	.18		mg/F	(g	, <u>_</u>	4			
Method Blank (1)	QC Batch: 65010										
OC Batch: 65010		Date Analyzed:	2009-11-04				Analyzed B	v: AR			
Prep Batch: 55525		QC Preparation:	2009-11-04				Prepared B	y: AR			
		M	DL								
Parameter	Flag	Res	ult		Unit	s		RL			
Ononde		~~	.10		mg/n	1 K					
Laboratory Control	Spike (LCS-1)					<u> </u>					
Laboratory Control QC Batch: 65008 Prep Batch: 55523	Spike (LCS-1)	Date Analyzed: QC Preparation:	2009-11-04 2009-11-04	Spiles	<u> </u>		Analyzed B Prepared B	y: AR y: AR			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param	Spike (LCS-1)	Date Analyzed: QC Preparation: CS sult Units	2009-11-04 2009-11-04 Dil	Spike	Mai Res	rix	Analyzed B Prepared B Bec	y: AR y: AR Rec. Limit			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride	Spike (LCS-1)	Date Analyzed: QC Preparation: CS Sult Units D1 mg/Kg	2009-11-04 2009-11-04 Dil. 1	Spike Amount 100	Mat Res <2	rix ult	Analyzed B Prepared B Rec. 101	y: AR y: AR Rec. Limit 85 - 115			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas	Spike (LCS-1) L( Res 1( ed on the spike result.	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t	2009-11-04 2009-11-04 Dil. 1 the spike and	Spike Amount 100 I spike dup	Mat Res <2 plicate re	rix ult 18 esult.	Analyzed B Prepared B Rec. 101	y: AR y: AR Rec. Limit 85 - 115			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas	Spike (LCS-1) L( Res 1( ed on the spike result. LCSD	Date Analyzed: QC Preparation: CS Sult Units D1 mg/Kg RPD is based on t	2009-11-04 2009-11-04 Dil. 1 the spike and Spike	Spike Amount 100 I spike dug Matrix	Mat Res <2 plicate re	rix ult .18 sult. Rec.	Analyzed B Prepared B Rec. 101	y: AR y: AR Rec. Limit 85 - 115 RPD			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param	Spike (LCS-1) L( Res 10 ed on the spike result. LCSD Result	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on the Units Dil.	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount	Spike Amount 100 I spike dup Matrix Result	Mat Res <2 plicate re Rec.	rix ult 18 sult. Rec. Limi	Analyzed B Prepared B Rec. 101 t RPD	y: AR y: AR Rec. Limit 85 - 115 RPD Limit			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param Chloride	Spike (LCS-1) L( Res 1( ed on the spike result. LCSD Result 100	Date Analyzed: QC Preparation: CS Sult Units DI mg/Kg RPD is based on the Units Dil. mg/Kg 1	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100	Spike Amount 100 I spike dup Matrix Result <2.18	Mat Res <2. plicate re Rec. 100	rix ult .18 esult. Rec. Limi 85 - 1	Analyzed B Prepared B Rec. 101 t RPD 15 1	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param Chloride Percent recovery is bas Laboratory Control	Spike (LCS-1) L( Res 1( ed on the spike result. LCSD Result 100 ed on the spike result. Spike (LCS-1)	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1 RPD is based on t	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and	Spike Amount 100 I spike dup Matrix Result <2.18 I spike dup	Mat Res <2 plicate re Rec. 100 plicate re	rix ult 18 sult. Rec. Limi 85 - 1 sult.	Analyzed B Prepared B Rec. 101 t RPD 15 1	y: AR y: AR Limit 85 - 115 RPD Limit 20			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param Chloride Percent recovery is bas Laboratory Control QC Batch: 65009	Spike (LCS-1) L( Res 1( ed on the spike result. LCSD Result 100 ed on the spike result. Spike (LCS-1)	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1 RPD is based on t Date Analyzed:	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04	Spike Amount 100 I spike dug Matrix Result <2.18 I spike dug	Mat Res <2 plicate re Rec. 100 plicate re	rix ult 18 sult. Limi 85 - 1 sult.	Analyzed B Prepared B <u>Rec.</u> 101 t RPD 15 1 Analyzed B	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20 y: AR			
Laboratory ControlQC Batch:65008Prep Batch:55523ParamChloridePercent recovery is basParamChloridePercent recovery is basLaboratory ControlQC Batch:65009Prep Batch:55524	Spike (LCS-1) LC Res 10 ed on the spike result. LCSD Result 100 ed on the spike result. Spike (LCS-1)	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on the Units Dil. mg/Kg 1 RPD is based on the Date Analyzed: QC Preparation:	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04 2009-11-04	Spike Amount 100 I spike duj Matrix Result <2.18 I spike duj	Mat Res <2 plicate re Rec. 100 plicate re	rix ult .18 sult. Limi 85 - 1 sult.	Analyzed B Prepared B Rec. 101 t RPD 15 1 Analyzed B Prepared B	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20 y: AR y: AR			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param Chloride Percent recovery is bas Laboratory Control QC Batch: 65009 Prep Batch: 55524	Spike (LCS-1) LC Res IC Result LCSD Result 100 ed on the spike result. Spike (LCS-1) LCSD	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on to Units Dil. mg/Kg 1 RPD is based on to Date Analyzed: QC Preparation: CS	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04 2009-11-04	Spike Amount 100 I spike dup Matrix Result <2.18 I spike dup	Mat Res <2 plicate re Rec. 100 plicate re	rix ult .18 sult. Limi 85 - 1 sult.	Analyzed B Prepared B Rec. 101 t RPD 15 1 Analyzed B Prepared B	y: AR y: AR Rec. Limit 85 - 115 RPD Limit 20 y: AR y: AR y: AR Rec.			
Laboratory Control QC Batch: 65008 Prep Batch: 55523 Param Chloride Percent recovery is bas Param Chloride Percent recovery is bas Laboratory Control QC Batch: 65009 Prep Batch: 55524 Param	Spike (LCS-1) L( Res 1( ed on the spike result. LCSD Result 100 ed on the spike result. Spike (LCS-1) L( Res	Date Analyzed: QC Preparation: CS sult Units D1 mg/Kg RPD is based on t Units Dil. mg/Kg 1 RPD is based on t Date Analyzed: QC Preparation: CS sult Units	2009-11-04 2009-11-04 Dil. 1 the spike and Spike Amount 100 the spike and 2009-11-04 2009-11-04 Dil.	Spike Amount 100 I spike dug Matrix Result <2.18 I spike dug Spike Amount	Mat Res <2 plicate re 100 plicate re Mat Res	rix ult 18 sult. Rec. Limi 85 - 1 sult.	Analyzed B Prepared B Rec. 101 t RPD 15 1 Analyzed B Prepared B Rec.	y: AR y: AR <u>Rec.</u> <u>Limit</u> <u>85 - 115</u> <u>RPD</u> <u>Limit</u> <u>20</u> y: AR y: AR y: AR y: AR			

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Percent recovery is based on	the spike result.	RPD is b	ased on	the spike an	d spike duj	olicate r	esult.				
	LCSD			Spike	Matrix		Rec.		RPD		
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit		
Chloride	102	mg/Kg	1	100	<2.18	102	85 - 115	1	20		
Percent recovery is based on	the spike result.	RPD is b	ased on t	the spike an	d spike dur	olicate r	esult.				
Laboratory Control Spik	e (LCS-1)										
QC Batch: 65010		Date Ana	alyzed:	2009-11-04	Ļ		Ar	alvzed B	v: AR		
Prep Batch: 55525		QC Prep	aration:	2009-11-04	Į		Pr	epared B	y: AR		
<b>r</b>									,		
	τc	i Pr			Spile	Ма	triv		Rea		
Param	Res	ult ]	Units	Dil	Amount	Ivia Res	ulix ault F	ton	Limit		
Chloride	99	<u>0 m</u>	onnes no/Ko	1	100	<2	18	<u>aa</u>	$\frac{11110}{85 - 115}$		
Persont recovery is based on	the enile result			the enile on	d apiles due						
rercent recovery is based on	the spike result.		aseu on	spike an	a spike au	incate r	esun.				
	LCSD			Spike	Matrix		Rec.		RPD		
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit		
Chloride	99.8	mg/Kg	1	100	<2.18	100	85 - 115	1	20		
Percent recovery is based on	the spike result.	RPD is b	ased on t	the spike an	d spike dup	olicate re	esult.				
		1									
Matrix Spike (MS-1) S	piked Sample: 2	13911									
QC Batch: 65008		Date Ana	alyzed:	2009-11-04			An	alyzed B	y: AR		
Prep Batch: 55523		QC Prep	aration:	2009-11-04	Ł		Pr	epared B	y: AR		
		1	I.								
	М	S			Spike	Ma	trix		Rec.		
Param	Res	ult I	Units	Dil.	Amount	Res	sult F	lec.	Limit		
Chloride	236	00 n	ıg/Kg	100	10000	133	LOO 1	.05	85 - 115		
Percent recovery is based on	the spike result.	RPD is b	ased on t	the spike an	d spike dup	olicate r	esult.				
	MSD		1	Spike	Matrix		Rec		RPD		
Param	Result	Units	Dil	Amount	Result	Rec	Limit	RPD	Limit		
Chloride	23700	mg/Kg	100	10000	13100	106	85 - 115	0	20		
Percent recovery is based on	the spike result	RPD is h	ased on t	he snike on	d snike dur	licate re	sult				
I ORCHIO TOCOVOLY ID DIDOCT OIL	one opine results.		, ,	no opine an	a opine auf						
Matrix Spike (MS-1) S	piked Sample: 21	13921	; ;								
QC Batch: 65009		Date Ana	ilvzed:	2009-11-04			An	alvzed B	v: AR		
Prep Batch: 55524		QC Preu	aration:	2009-11-04	ł		Pr	cpared B	, AR		
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Report Date: November 5, 114-6400305	2009		Work Or St. Mar	der: 911040 y/Inca 1 Tl	)2 B		Page	Number Lea	: 12 of 13 Co., NM
Param Chloride	M Res 22	IS sult 200	Units mg/Kg	Dil	Spike Amount 10000	Ma Re 11	trix sult 1 600	Rec.	Rec. Limit 85 - 115
Percent recovery is based or	n the spike result	RPD is	based on :	the spike ar	nd spike dur	olicate r	esult.		
Param	MSD	Unite	ווּת	Spike	Matrix Regult	Pog	Rec.	מסת	RPD Limit
Chloride	22400	mg/Kg	100	10000	11600	108	85 - 115	<u>1</u>	20
Percent recovery is based on	n the spike result.	RPD is	based on t	the spike ar	ıd spike dur	olicate r	esult.		
Matrix Spike (MS-1)	Spiked Sample: 2	13923							
QC Batch: 65010 Prep Batch: 55525		Date Ar QC Pre	nalyzed: paration:	2009-11-0 2009-11-0	4 4		Aı Pı	nalyzed E repared E	iy: AR iy: AR
_	N	IS			Spike	Ma	trix	_	Rec.
Param			Units	 	Amount	Re	sult 1	$\frac{\text{Rec.}}{100}$	Limit
	102		mg/Kg	100	10000	<2	218	102	85 - 115
Percent recovery is based of	n the spike result.	RPD 15	based on 1	the spike an	id spike dur	olicate r	esult.		
	MSD			Spike	Matrix		Rec.		RPD
Param	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride	10400	mg/Kg	, 100	10000	<218	104	85 - 115	2	20
Standard (ICV-1)	n une spike result.		based on t	ше эрлке ан	u spike uu	meate r	csuit.		
QC Batch: 65008		Date Ar	alyzed:	2009-11-04			Aı	nalyzed E	by: AR
QC Batch: 65008		Date Ar ICVs	ıalyzed: IC	2009-11-04 Vs	ICVs		A1 Percent	nalyzed E	3y: AR
QC Batch: 65008		Date Ar ICVs True	ialyzed: IC Foi	2009-11-04 Vs 1nd	ICVs Percent	]	Aı Percent Recovery	nalyzed E	y: AR Date
QC Batch: 65008 Param Flag	Units	Date Ar ICVs True Conc.	ialyzed: IC Foi Co	2009-11-04 Vs ind nc.	ICVs Percent Recovery	]	An Percent Recovery Limits	nalyzed E A	By: AR Date nalyzed
QC Batch: 65008 Param Flag Chloride	Units mg/Kg	Date An ICVs True Conc. 100	ialyzed: IC Foi  99	2009-11-04 Vs ind inc. ).8	ICVs Percent Recovery 100	]	Ar Percent Recovery Limits 85 - 115	nalyzed E A 20	By: AR Date .nalyzed 109-11-04
QC Batch: 65008 Param Flag Chloride Standard (CCV-1)	Units mg/Kg	Date An ICVs True Conc. 100	ialyzed: IC Foi Co 99	2009-11-04 Vs und nc. ).8	ICVs Percent Recovery 100	]	An Percent Recovery Limits 85 - 115	nalyzed F A 20	By: AR Date .nalyzed 109-11-04
QC Batch: 65008          Param       Flag         Chloride	Units mg/Kg	Date An ICVs True Conc. 100 Date Ar	ialyzed: Foi <u>Co</u> 99	2009-11-04 EVs und nc. ).8 2009-11-04	ICVs Percent Recovery 100	]	An Percent Recovery Limits 85 - 115 An	nalyzed F <u>A</u> 20 nalyzed B	By: AR Date <u>nalyzed</u> 109-11-04
QC Batch: 65008          Param       Flag         Chloride	Units mg/Kg Units	Date An ICVs True Conc. 100 Date An CCVs True Conc.	ialyzed: Foi <u>Co</u> 99 ialyzed: CC Foi Co	2009-11-04 EVs und nc. ).8 2009-11-04 EVs ind nc.	ICVs Percent <u>Recovery</u> 100 CCVs Percent Recovery	]	An Percent Recovery Limits 85 - 115 An Percent Recovery Limits	nalyzed F <u>A</u> 20 nalyzed B	By: AR Date <u>nalyzed</u> 009-11-04 by: AR Date nalyzed

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Report Dat 114-640030	e: November 5	5, 2009	V S	Work Order: 91 St. Mary/Inca	10402 1 TB	Page N	umber: 13 of 13 Lea Co., NM			
Standard (	(ICV-1)									
QC Batch:	65009		Date Ana	lyzed: 2009-11	1-04	Ana	lyzed By: AR			
			ICVs	ICVs	ICVs	Percent				
			True	Found	Percent	Recovery	Date			
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed			
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-04			
Standard (	(CCV-1)									
QC Batch:	65009		Date Anal	lyzed: 2009-11	-04	Anal	yzed By: AR			
			CCVs	CCVs	CCVs	Percent				
			True	Found	Percent	Recovery	Date			
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed			
Chloride	<u>~</u>	mg/Kg	100	99.2	99	85 - 115	2009-11-04			
Standard (	(ICV-1)									
QC Batch:	65010		Date Anal	lyzed: 2009-11	-04	Anal	yzed By: AR			
			ICVs	ICVs	ICVs	Percent				
			True	Found	Percent	Recovery	Date			
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed			
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-04			
Standard (	(CCV-1)									
QC Batch:	65010		Date Anal	yzed: 2009-11	-04	Analyzed By: A				
			CCVs	CCVs	CCVs	Percent				
			True	Found	Percent	Recovery	Date			
Param	Flag	Units	Conc.	Conc.	Recovery	Limits	Analyzed			
Chloride	· ·	mg/Kg	100	101	101	85 - 115	2009-11-04			

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Of Chain of Custody Record         Рассила         Рас	/ OF: 3	SQJ	<u>у</u> на,епо	.3 <del>6</del> C. 3 (Alt) 3 (Alt	S smms9 ste8 sriqiA ste8 MJ9 binA tojsM binA tojsM											Date: Tane:	AIRBILL #: OTHER:	Results by:	RUSH Charges
Of Chain of Custody Record     TETRA TECH     TECH     TETRA TECH     1910 N. Big Spring St.     Midland, Texas 79705     432) 882-3946     432) 882-3946     432) 882-3946     432) 882-3946     432) 882-3946     432) 882-3946     412    12     1	PAGE: ANALYSIS REQUE (Circle or Specify Meth	4 Ct bp H <sup>2</sup> 29	8270/625 45 84 Cd 45 84 Cd 45 84 Cd	60% 60% 1 Volatile 1 Volatile 1 Volatile 0,608 0,608 0,608	Peet 608/ Peet 6						$\lambda$	γ       γ				Sandrees of the pin a please 10 - X	SAMPLE SHIPPED BY: (Circle) FEDEX BUS	TETRA TECH CONTACT PERSON:	the mush
Cof Chain of Cust 1910 N. Big Spring St. Midland, Texas 79705 (132) 682-4559 + Fax (132) 682-3946 1910 N. Big Spring St. Midland, Texas 79705 (132) 682-4559 - Fax (132) 682-3946 1910 N. Ele Spring St. Midland, Texas 79705 1910 N. Big Spring St. Midland, Texas 79705 1910 N. Big Spring St. 1910 N. Big St. 1910 N. Big Spring St. 1910 N. Big St	ody Record		PRESERVATIVE METHOD METHOD		<u>В</u> ШЕХ 8051 ВШЕХ 8051 ICE HИОЗ HIO KITLEHED KITLEHED												Date: Time:	Date: Time:	
	of Chain of Custo	<b>TETRA TECH</b> 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	SITE MANUGER: / CANTON	11 -het 178,	U ( D CU X MA. SAMPLE IDENTIFICATION	4.1 8-5	47 10-11	1-1 15-16	1-1 20-21	22.5C 1.1	4-1 34-31	1-1 do-41	1-1 SU-SI	1-1 60-61'	H-2 10-11	HAC STONES	CALLY CONTRECEIVED BY (Signature)	RECENED BY: (Signature)	RECEIVED BY: (Signature)

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		TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-36	SITE MANAGER: / MUGACZ	PROJECT NAME: 1 TNG A 1 TS	CCA CU. NUM COMPE DENTIFICATIO	5 BH-2 15-16	5 'BH-2 Du-21'	5 2H'2 30-31'	5 184.2 40-41'	\$ 1 8 H.Z SU-51'	5 184-3 10-11'	× 1/2+1.3 1/2-161	, 10me E-H21 5	5 BH-3 36. 31'	C'124-3 (40.41')	Date: 1 A A A A A A A A A A A A A A A A A A	Date:	Date:	CT DC Signature 2 ZIP:	PHONE: DATE
	uysis r		Mary	10 0305	DATE TIME	605									>[	COND -	BY: (Signature)	3Y. (Signature)	DRATORY:	TOM WHEN RECEIVED:
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I296 FAX 806 • 794 • 1298 I443 FAX 915 • 585 • 4944 I301 FAX 432 • 689 • 6313 I260

### Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

### Analytical and Quality Control Report

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

Report Date: September 26, 2011

Work Order: 11091604

Project Location:Lea Co., NMProject Name:St. Mary/Inca #1 Tank BatteryProject Number:114-6400305

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
277446	CS-NE	soil	2011-08-29	00:00	2011-09-15
277447	CS-E	soil	2011-08-31	00:00	2011-09-15

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

Michael

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

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# **Report Contents**

Case Narrative	3
Analytical Report         Sample 277446 (CS-NE)         Sample 277447 (CS-E)	4 4 4
Method Blanks QC Batch 84900 - Method Blank (1)	5 5
Laboratory Control Spikes           QC Batch 84900 - LCS (1)           QC Batch 84900 - MS (1)	6 6 6
Calibration Standards           QC Batch 84900 - ICV (1)           QC Batch 84900 - CCV (1)	7 7 7
Appendix         Laboratory Certifications         Standard Flags         Attachments	8 8 8 8

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### **Case Narrative**

Samples for project St. Mary/Inca #1 Tank Battery were received by TraceAnalysis, Inc. on 2011-09-15 and assigned to work order 11091604. Samples for work order 11091604 were received intact at a temperature of 17.6 C.

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

		Prep	Prep	$\mathbf{QC}$	Analysis
Test	Method	$\operatorname{Batch}$	Date	Batch	Date
Chloride (Titration)	SM 4500-Cl B	72089	2011-09-16 at 11:58	84900	2011-09-21 at 12:16

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 11091604 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.

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Report Date: September 26, 2011 114-6400305

# **Analytical Report**

#### Sample: 277446 - CS-NE

Laboratory: Analysis: QC Batch: Prep Batch:	ry: Midland Chloride (Titration) n: 84900 ch: 72089		Analytic Date An Sample	cal Method: nalyzed: Preparation:	SM 4500-Cl B 2011-09-21 2011-09-20	Prep Method: Analyzed By: Prepared By:	N/A AR AR
				$\mathbf{RL}$			
Parameter		Flag	Cert	Result	Units	Dilution	$\mathbf{RL}$
Chloride				222	mg/Kg	50	4.00

#### Sample: 277447 - CS-E

Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 84900 72089	Analytic Date An Sample I	al Method: alyzed: Preparation:	SM 4500-Cl B 2011-09-21 2011-09-20	Prep Method: Analyzed By: Prepared By:	N/A AR AR
Parameter	$\mathbf{Flag}$	Cert	$\operatorname{RL}$ Result	Units	Dilution	$\mathbf{RL}$
Chloride			374	mg/Kg	50	4.00

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Report Date: September 26, 2011 114-6400305

### Method Blanks

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Method Bla	ank (1)	QC Batch: 84900				
QC Batch: Prep Batch:	84900 72089		Date Analyzed: QC Preparation:	2011-09-21 2011-09-16	Analyzed By Prepared By	: AR : AR
Parameter		Flag	Cert	MDL Result	Units	RL
Chloride				<3.85	mg/Kg	4

••• • Report Date: September 26, 2011 114-6400305

## Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84900 Prep Batch: 72089			Dat QC	e Analyzec Preparatic	l: 201 on: 201	1-09-21 1-09-16			Ana Prep	yzed By ared By	: AR : AR
Param		F	С	LCS Result	Units	Dil.	Spike Amoun	M t R	atrix esult R	lec.	Rec. Limit
Chloride		·		95.3	mg/Kg	1	100	<	3.85	95 8	5 - 115
Percent recovery is based on t	he spike	e resu	lt. RPI	) is based (	on the s	oike and s	pike dupli	cate res	ult.		
u u	-		LCSE		-	Snike	 Matrix		Rec		RPD
Param	F	С	Resul	t Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	10	20
Matrix Spike (MS-1) Sp QC Batch: 84900	piked Sa	mple	:: 277494 Dat	l e Analyzec	ł: 201	1-09-21			Ana	lyzed By	: AR
Prep Batch: 72089			QC	Preparatio	on: 201	1-09-16	Spike	Motr	Prep	ared By	: AR
Param		F	C F	Result	Units	Dil.	Amount	Resu	lt Rec.	L	imit
Chloride		-	<u> </u>	9890 г	ng/Kg	100	10000	<38	5 99	79.4	- 120.6
Percent recovery is based on t	he spike	e resu	ılt. RPI	) is based o	on the sp	oike and s	pike dupli	cate res	ult.		
			MSD			Spike	Matrix		Rec.		RPD
Param	F	С	Result	Units	Dil. A	mount	Result 1	Rec.	Limit	RPD	Limit
Chloride			10300	mg/Kg	100	10000	<385	103 7	9.4 - 120.6	4	$\overline{20}$

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

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# **Calibration Standards**

#### Standard (ICV-1)

QC Batch:	84900			Date A	nalyzed:	2011-09-21		Analy	zed By: AR
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	$\mathbf{Date}$
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	102	102	85 - 115	2011-09-21

#### Standard (CCV-1)

QC Batch:	84900			Date A	analyzed: 2	2011-09-21		Analy	zed By: AR
					CCVs	CCVs Found	CCVs Persont	Percent	Data
					ITue	rouna	Fercent	necovery	Date
Param		Flag	$\operatorname{Cert}$	$\mathbf{Units}$	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	97.8	98	85 - 115	2011-09-21

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### Appendix

#### Laboratory Certifications

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

#### Standard Flags

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

#### Attachments

The scanned attachments will follow this page. Please note, each attachment may consist of more than one page.

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PAGE: 1 JF: 1	Clircle or Specify Method No.)	LD2 A A b b H B 20 A C b b H B 20 E X 4 D C32)	PRESERVATIVE PRESERVATIVE SEGV624 SEGV624 SEGV625 SEGV65 SE	(V/V) 6 MOD. 6 MOD. 198 Ag A 198	НССЕНЕНЕО (           НССЕ           ВЕТЕХ 8030           ССВ-8 8080           ССВ-8 8080           ВЕТЕХ 80210           ВССК-8 8080							Date: イノノフノリ SAMPLED BY: (Print & Initial) Date: フェース・コート	Date: SAMPLE SHIPPED BY: (Circle) AIRBILL #:	Date: CHARD DELIVERED UPS OTHER: CHARD	Time:	Authorizad: Yes No	h Dmiart Mananar tataina Diok conv Accounting paralyas Gold roby.
Analysis Reginest of Chain of Ciletody R		<b>TETRA TECH</b> 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	CLIENT NAME: SITE MANAGER:	PROJECT NO .: PROJECT NAME:	LAB I.D. DATE TIME RY COMPLEIDENTIFICATION COMPLETERED OF COMPLETE	1 and X CS X CS Marked and Although	447 812, 5 × Cone						RELINQUISHED BY: (Signature) Date:RECEIVED BY: (Signature)	RELINOU/ISHED BY: (Signature) Date:	RECEIVING LABORATORY: 6-0-1.0. RECEIVED BY: (Signature) ADDRESS:	CITY: MALAND STATE TH. ZIP: OATE: OATE: THE THONE ZIP: DATE: DATE: THE	SAMPLE CONDITION WHEN RECEIVED: 17.6 C MACLA AMURANCE AMURANCE AMURAN ALLANDON ON TO THAT TACH Provess full one all concises - L'advinance retains Yollow CODY - Borling Conv to Terry Tach

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