pJXK1535233738

4037

HOBBS OCD

MAR 19 2012

RECEIVED

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

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 Name **Inca 1 Battery**	Facility Type **Tank Battery**

Surface Owner: BLM	Mineral Owner: BLM	Lease No. 30-025-29887

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	19	18S	32E					Lea County

Latitude N 32.73786° **Longitude** W 103.81388 °

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release 50 bbls	Volume Recovered 0 bbls
Source of Release: 3.0" polyethylene transition	Date and Hour of Occurrence 09/23/2009 @ 8:30 am	Date and Hour of Discovery 09/23/2009 @ 8:30 am
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? **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? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse. 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 #1to 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.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: Aaron Hale (agent for SM Energy)	Approved by District Supervisor:	
Title: Project Manager	Approval Date:	Expiration Date:
E-mail Address: aaron.hale@tetratech.com	Conditions of Approval:	Attached ☐
Date: Phone: (432) 682-4559		

* Attach Additional Sheets If Necessary

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

RECEIVED
SEP 28 2009
#OBBSOCD

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised October 10, 2003

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company St. Mary Land & Exploration Co.	Contact Donna Huddleston
Address 3300 N. A Street, Bldg. 7, Ste. 200 Midland, , TX	Telephone No. (432)688-1789
Facility Name Inca 1 Battery	Facility Type Battery

Surface Owner BLM	Mineral Owner BLM	Lease No.

LOCATION OF RELEASE

E. SHUGART DELAWARE POOL
API # 30-025-29887-00-00

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	19	18S	32E					Lea County

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Prod Water	Volume of Release 50 bbls / Volume Recovered 0 bbls
Source of Release 3.0" polyethylene transition	Date and Hour of Occurrence 9/23/09 / Date and Hour of Discovery 8:30AM
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Trish Badbear W/ BLM & Maxie Brown w/ NMOCD
By Whom? Bill Hearne	Date and Hour 9/23/09 3:36PM
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.

If a Watercourse was Impacted, Describe Fully.*

WATER 9225'

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 injection station.
Shut off SW transfer pump. Cut out both 3.0" polyethylene transisitions and 3.0" butterfly valve. Welded polyethylene line back together and returned line to service.

Describe Area Affected and Cleanup Action Taken.*

Spill Area: 35' x 95' = 3325 sq. ft. Estimated 50 produced water spilled. None recovered.

Notified Tetra-Tech to remediate spill area.

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.

Signature: Donna Huddleston

Printed Name: Donna Huddleston

Title: Production Tech

E-mail Address: dhuddleston@stmaryland.com

Date: 09/24/2009 Phone: (432)688-1789

OIL CONSERVATION DIVISION

Approved by ~~District Supervisor~~ ENV ENGINEER: Geoffrey Leking

Approval Date: 09/29/09 Expiration Date: 11/30/09

Conditions of Approval: DELINEATE TO CLEAN +1. SUBMIT FINAL C-141 BY 11/30/09

Attached ☐

IRP-09-10-2302

* Attach Additional Sheets If Necessary

fGRL0928752451

PJXK1535233738

HOBBS OCD

AUG 22 2011

RECEIVED

SITE INFORMATION

Report Type: Work Plan

General Site Information:	
Site:	Inca #1 Tank Battery
Company:	SM Energy Company
Section, Township and Range	Section 19, T18S, R32E Unit Letter - D
Lease Number:	
County:	Lea County
GPS:	32.73774° N, 103.81370° W
Surface Owner:	Federal
Mineral Owner:	
Directions:	From the intersection of Hwy 82 and Shugart Rd (Loco Hills), go south on Shugart Rd exactly 4 miles. Turn to the Southeast on a caliche road and travel southeast for another 4 miles until the road ends. Turn onto the road to the northeast and travel approximatly 1.1 miles to the Geronimo Federal Injection Station. Take the caliche road on the east side of the station to the north east and travel 0.4 miles. Turn east on caliche road and travel 0.15 miles to the location.

Release Data:	
Date Released:	9/23/2009
Type Release:	Produced Water
Source of Contamination:	3" Polyethylene transition
Fluid Released:	50 bbls
Fluids Recovered:	0 bbls

Official Communication:			
Name:	Chad McNeely		Aaron Hale
Company:	SM Energy Company		Tetra Tech
Address:	3300 N A St # 7-200		1910 N. Big Spring
P.O. Box			
City:	Midland, Texas		Midland, Texas
Phone number:	(432) 688-3124		(432) 682-4559
Fax:			
Email:	cmcneely@sm-energy.com		aaron.hale@tetratech.com

Ranking Criteria

Depth to Groundwater:	*Ranking Score*	*Site Data*
<50 ft	20	
50-99 ft	10	
>100 ft.	0	**0**

WellHead Protection:	*Ranking Score*	*Site Data*
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*

Surface Body of Water:	*Ranking Score*	*Site Data*
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	**0**	*0*
Total Ranking Score:	**0**	

Acceptable Soil RRAL (mg/kg)		
Benzene	*Total BTEX*	*TPH*
10	50	5,000

GW-91230

approved
Geoffrey Leking
NMOCD- HOBBS
08/23/11

DEC 22 2015

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.

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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.

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

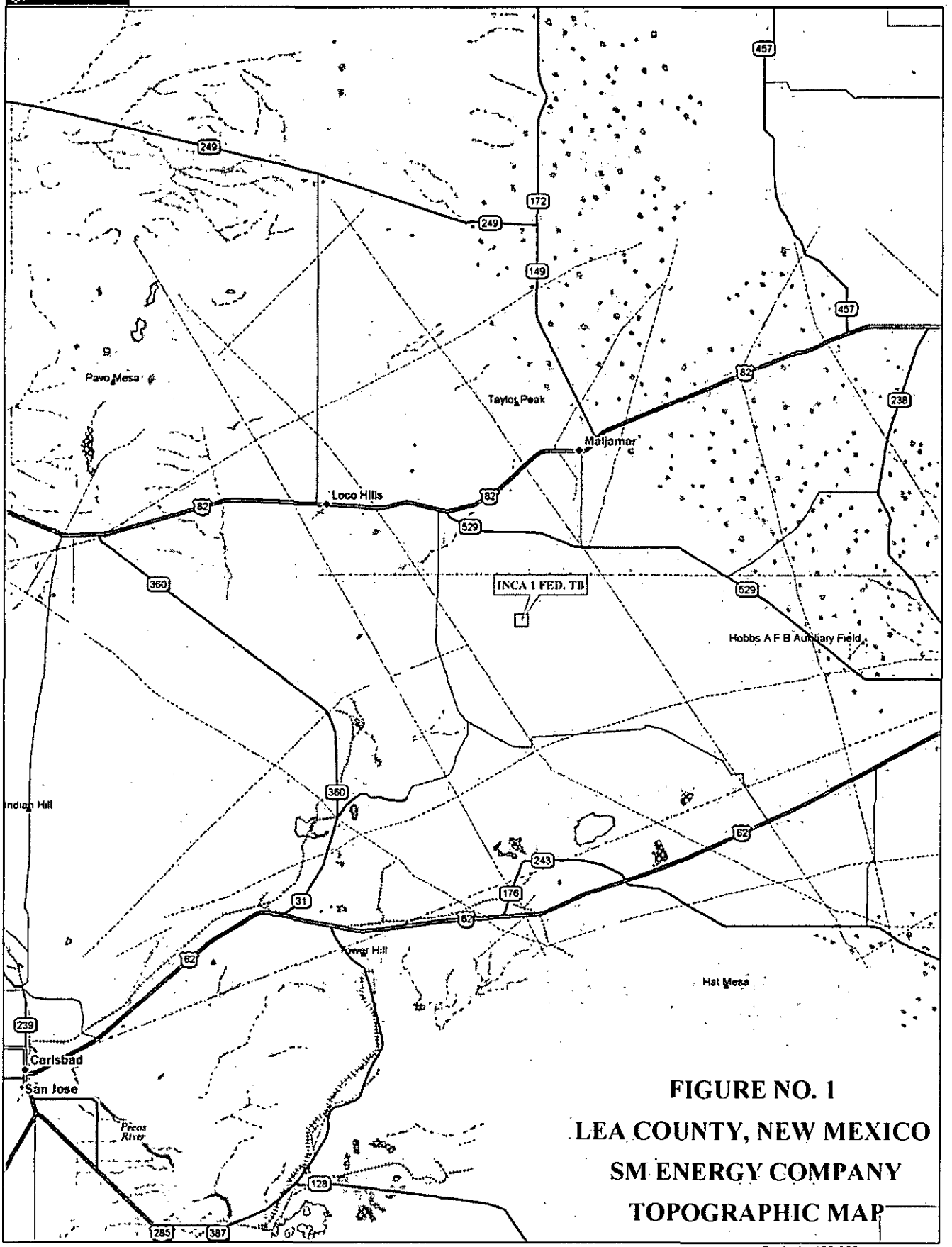


FIGURE NO. 1

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

TOPOGRAPHIC MAP

TN
MN (7.8°E)

Scale 1 : 400,000
1" = 6.31 mi
Data Zoom 9-0

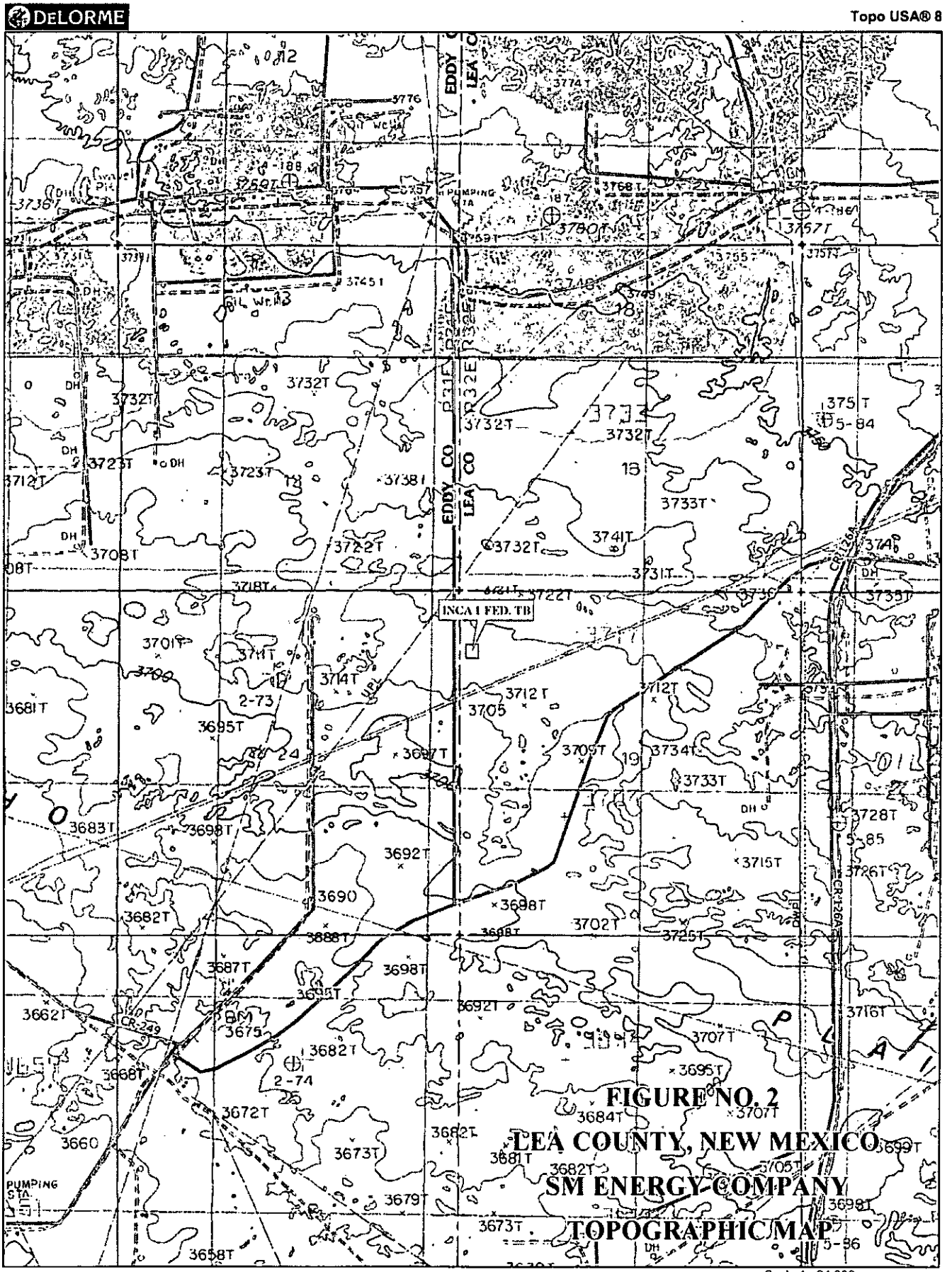
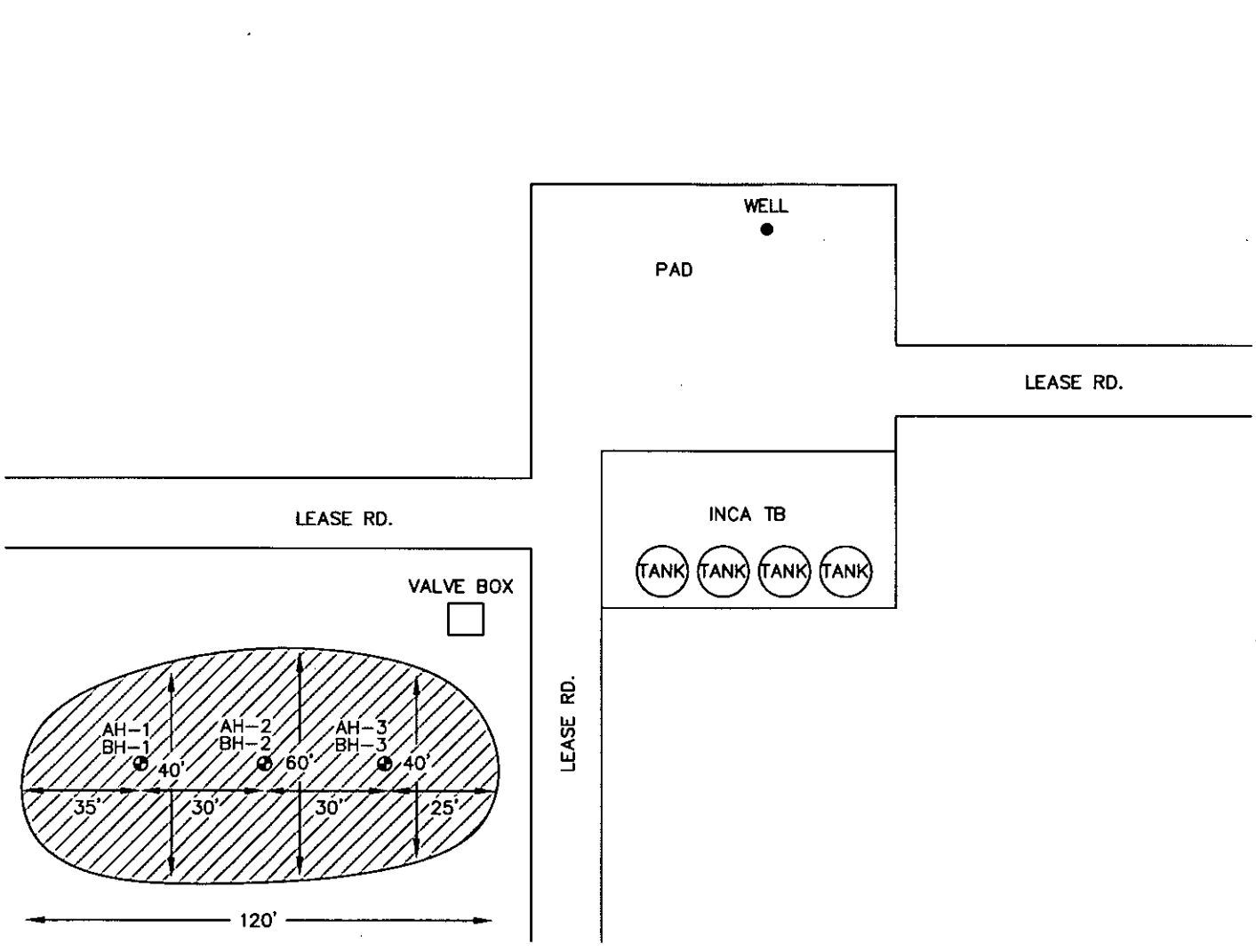


FIGURE NO. 2

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

TOPOGRAPHIC MAP



SPILL AREA
AUGER HOLE LOCATIONS
BORE HOLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

INCA 1 FED. TB

DATE: 10/8/09
DWN. BY: JJ
FILE: H:\ST. MAP\8400305

TETRA TECH, INC.
MIDLAND, TEXAS

TABLES

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

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-1	10/5/2009	0-1	X		<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	2,060
		1-1.5	X		-	-	-	-	-	-	-	2,070
		2-2.5	X		-	-	-	-	-	-	-	5,760
		3-3.5	X		-	-	-	-	-	-	-	10,900
		4-4.5	X		-	-	-	-	-	-	-	11,100
		5-5.5	X		-	-	-	-	-	-	-	19,700
		6-6.5	X		-	-	-	-	-	-	-	27,400
BH-1	11/3/2009	8-9	X		-	-	-	-	-	-	-	25,000
		10-11	X		-	-	-	-	-	-	-	13,500
		15-16	X		-	-	-	-	-	-	-	11,300
		20-21	X		-	-	-	-	-	-	-	16,500
		25-26	X		-	-	-	-	-	-	-	14,000
		30-31	X		-	-	-	-	-	-	-	11,000
		40-40	X		-	-	-	-	-	-	-	7,120
		50-51	X		-	-	-	-	-	-	-	2,660
		60-61	X		-	-	-	-	-	-	-	<200
AH-2	10/5/2009	0-1	X		<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	4,530
		1-1.5	X		-	-	-	-	-	-	-	4,930
		2-2.5	X		-	-	-	-	-	-	-	8,060
		3-3.5	X		-	-	-	-	-	-	-	12,800
		4-4.5	X		-	-	-	-	-	-	-	12,200
		5-5.5	X		-	-	-	-	-	-	-	16,000
		6-6.5	X		-	-	-	-	-	-	-	23,400
BH-2	11/3/2009	10-11	X		-	-	-	-	-	-	-	13,100
		15-16	X		-	-	-	-	-	-	-	18,600
		20-21	X		-	-	-	-	-	-	-	17,800
		30-31	X		-	-	-	-	-	-	-	12,200
		40-40	X		-	-	-	-	-	-	-	11,300
		50-51	X		-	-	-	-	-	-	-	<200

(-) not analyzed

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

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-3	10/5/2009	0-1	X		52.0	<1.0	52.0	<0.01	<0.01	<0.01	<0.01	4,230
		1-1.5	X		-	-	-	-	-	-	-	10,100
		2-2.5	X		-	-	-	-	-	-	-	6,930
		3-3.5	X		-	-	-	-	-	-	-	10,200
		4-4.5	X		-	-	-	-	-	-	-	11,400
		5-5.5	X		-	-	-	-	-	-	-	29,200
BH-3	11/3/2009	10-11	X		-	-	-	-	-	-	-	15,600
		15-16	X		-	-	-	-	-	-	-	15,700
		20-21	X		-	-	-	-	-	-	-	15,000
		30-31	X		-	-	-	-	-	-	-	14,500
		40-40	X		-	-	-	-	-	-	-	11,600
		50-51	X		-	-	-	-	-	-	-	3,780
		60-61	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed

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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (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

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	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	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	Units	RL
Chloride		**27400**	mg/Kg	4.00

Sample: 211603 - AH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**4530**	mg/Kg	4.00

Sample: 211604 - AH-2 1'-1.5'

Param	Flag	Result	Units	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	RL
Chloride		**12200**	mg/Kg	4.00

Sample: 211608 - AH-2 5'-5.5'

Param	Flag	Result	Units	RL
Chloride		**16000**	mg/Kg	4.00

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

Param	Flag	Result	Units	RL
Chloride		**23400**	mg/Kg	4.00

Sample: 211610 - AH-3 0-1'

Param	Flag	Result	Units	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

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	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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
5015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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.

Sample	Description	Matrix	Date Taken	Time Taken	Date 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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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.

Michael Abel

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

Standard Flags

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 2009-10-05 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.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis 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 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.

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

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

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:	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

Parameter	Flag	Result	RL	Units	Dilution	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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		104	mg/Kg	1	100	104	13.2 - 219.3

Sample: 211596 - AH-1 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

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)		1.97	mg/Kg	1	2.00	98	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	61.7 - 119.9

Sample: 211597 - AH-1 1-1.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2070**	mg/Kg	100	4.00

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5760**	mg/Kg	100	4.00

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**10900**	mg/Kg	100	4.00

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

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**11100**	mg/Kg	100	4.00

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

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**19700**	mg/Kg	100	4.00

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

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**27400**	mg/Kg	100	4.00

Sample: 211603 - AH-2 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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	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: 211603 - AH-2 0-1'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4530**	mg/Kg	100	4.00

Sample: 211603 - AH-2 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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

Sample: 211603 - AH-2 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

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)		2.02	mg/Kg	1	2.00	101	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		2.01	mg/Kg	1	2.00	100	61.7 - 119.9

Sample: 211604 - AH-2 1'-1.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4930**	mg/Kg	100	4.00

Sample: 211605 - AH-2 2'-2.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8060**	mg/Kg	100	4.00

Sample: 211606 - AH-2 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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**12800**	mg/Kg	100	4.00

Sample: 211607 - AH-2 4'-4.5'

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**12200**	mg/Kg	100	4.00

Sample: 211608 - AH-2 5'-5.5'

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**16000**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**23400**	mg/Kg	100	4.00

Sample: 211610 - AH-3 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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	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:	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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4230**	mg/Kg	100	4.00

Sample: 211610 - AH-3 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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**52.0**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

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

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)		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:	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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10100**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL 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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10200**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**11400**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**29200**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 64188

QC Batch:	64188	Date Analyzed:	2009-10-06	Analyzed By:	kg
Prep Batch:	54818	QC Preparation:	2009-10-06	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		99.4	mg/Kg	1	100	99	13 - 178.5

Method Blank (1) QC Batch: 64189

QC Batch:	64189	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	QC Preparation:	2009-10-05	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01

continued ...

method blank continued ...

Parameter	Flag	MDL Result	Units	RL
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.80	mg/Kg	1	2.00	90	64.9 - 122.7
4-Bromofluorobenzene (4-BFB)		1.57	mg/Kg	1	2.00	78	43.9 - 121.9

Method Blank (1) QC Batch: 64190

QC Batch:	64190	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	QC Preparation:	2009-10-05	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	62 - 120.5

Method Blank (1) QC Batch: 64315

QC Batch:	64315	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54853	QC Preparation:	2009-10-07	Prepared By:	AR

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

Method Blank (1) QC Batch: 64316

QC Batch:	64316	Date Analyzed:	2009-10-09	Analyzed By:	AR
Prep Batch:	54854	QC Preparation:	2009-10-07	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 64188 | Date Analyzed: 2009-10-06 | Analyzed By: kg
Prep Batch: 54818 | QC Preparation: 2009-10-06 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	196	mg/Kg	1	250	<5.86	78	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	190	mg/Kg	1	250	<5.86	76	57.4 - 133.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	107	102	mg/Kg	1	100	107	102	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 64189 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.85	mg/Kg	1	2.00	<0.00410	92	75.4 - 115.7
Toluene	1.82	mg/Kg	1	2.00	<0.00310	91	78.4 - 113.6
Ethylbenzene	1.74	mg/Kg	1	2.00	<0.00240	87	76 - 114.2
Xylene	5.24	mg/Kg	1	6.00	<0.00650	87	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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 on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.78	1.80	mg/Kg	1	2.00	89	90	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.80	1.80	mg/Kg	1	2.00	90	90	43.8 - 124.9

Laboratory Control Spike (LCS-1)

QC Batch: 64190 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.1	mg/Kg	1	20.0	<0.396	86	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.6	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.03	mg/Kg	1	2.00	101	102	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.83	1.81	mg/Kg	1	2.00	92	90	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 64315 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54853 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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.

Laboratory Control Spike (LCS-1)

QC Batch: 64316 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54854 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.1	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.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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: 211151

QC Batch: 64188 | Date Analyzed: 2009-10-06 | Analyzed By: kg
Prep Batch: 54818 | QC Preparation: 2009-10-06 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	220	mg/Kg	1	250	<5.86	88	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	228	mg/Kg	1	250	<5.86	91	35.2 - 167.1	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	101	102	mg/Kg	1	100	101	102	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 211517

QC Batch: 64189 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.90	mg/Kg	1	2.00	<0.00410	95	57.7 - 140.7
Toluene	1.87	mg/Kg	1	2.00	<0.00310	94	53.4 - 146.6
Ethylbenzene	1.84	mg/Kg	1	2.00	<0.00240	92	62.1 - 141.6
Xylene	5.64	mg/Kg	1	6.00	<0.00650	94	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.01	mg/Kg	1	2.00	<0.00410	100	57.7 - 140.7	6	20
Toluene	1.99	mg/Kg	1	2.00	<0.00310	100	53.4 - 146.6	6	20
Ethylbenzene	1.97	mg/Kg	1	2.00	<0.00240	98	62.1 - 141.6	7	20
Xylene	5.99	mg/Kg	1	6.00	<0.00650	100	61.2 - 142.7	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
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: 211517

QC Batch: 64190 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.6	mg/Kg	1	20.0	1.6	80	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	18.2	mg/Kg	1	20.0	1.6	83	10 - 198.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD 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: 211605

QC Batch: 64315 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54853 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	18700	mg/Kg	100	10000	8060	106	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	18800	mg/Kg	100	10000	8060	107	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: 211615

QC Batch: 64316 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54854 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	40400	mg/Kg	100	10000	29200	112	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	40600	mg/Kg	100	10000	29200	114	85 - 115	0	20

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

Standard (CCV-2)

QC Batch: 64188 Date Analyzed: 2009-10-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	236	94	80 - 120	2009-10-06

Standard (CCV-3)

QC Batch: 64188 Date Analyzed: 2009-10-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	249	100	80 - 120	2009-10-06

Standard (CCV-3)

QC Batch: 64189 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0956	96	80 - 120	2009-10-05
Toluene		mg/Kg	0.100	0.0932	93	80 - 120	2009-10-05
Ethylbenzene		mg/Kg	0.100	0.0877	88	80 - 120	2009-10-05
Xylene		mg/Kg	0.300	0.265	88	80 - 120	2009-10-05

Standard (CCV-4)

QC Batch: 64189 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0908	91	80 - 120	2009-10-05
Toluene		mg/Kg	0.100	0.0885	88	80 - 120	2009-10-05
Ethylbenzene		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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-10-05

Standard (CCV-3)

QC Batch: 64190 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2009-10-09

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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-10-09

Order #: 9100524

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 2

CLIENT NAME: St Marys

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6406305

PROJECT NAME: St Marys / Incu 1 TB
Lea Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 8081/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
211596	10/5		S		X	AH-1 0-1'	1					X	X	X											X				
597						AH-1 1'-1.5'																							
598						AH-1 2'-2.5'																							
599						AH-1 3'-3.5'																							
600						AH-1 4'-4.5'																							
601						AH-1 5'-5.5'																							
602						AH-1 6'-6.5'																							
603						AH-2 0-1'							X	X															
604						AH-2 1'-1.5'																							
605	▼		▼		▼	AH-2 2'-2.5'	▼					▼													▼				

RELINQUISHED BY: (Signature) — Date: 10/5/09 Time: 15:30 — RECEIVED BY: (Signature) — Date: 10/5/09 Time: 15:30

SAMPLED BY: (Print & Initial) JT/12m — Date: 10/5/09 Time:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

RECEIVING LABORATORY: Trac — RECEIVED BY: (Signature)
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 27.4°c intact

REMARKS: If TPH exceeds 5,000 mg/kg, run deeper horizons • Straight from field, All tests-Midland

If total BTEX exceeds 50 ppm, run deeper horizons

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

Order #: 9100524

Analysis Request of Chain of Custody Record

PAGE: 2 OF: 2

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St Marys
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6406305
PROJECT NAME: St. Marys / Jrg 1 TB Lea Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE
211 6006	10/5		S		X	AH-2 3'-3.5'						
607						AH-2 4'-4.5'						
608						AH-2 5'-5.5'						
609						AH-2 6'-6.5'						
610						AH-3 0-1'						
611						AH-3 1'-1.5'						
612						AH-3 2'-2.5'						
613						AH-3 3'-3.5'						
614						AH-3 4'-4.5'						
615	↓		↓		↓	AH-3 5'-5.5'						

ANALYSIS REQUEST (Circle or Specify Method No.)

BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
X	X											X				

RELINQUISHED BY: (Signature) Date: 10/5/09 Time: 1350
RECEIVED BY: (Signature) Date: 10/5/09 Time: 15:50
SAMPLED BY: (Print & Initial) JT/RM Date: 10/5/09 Time:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
RECEIVING LABORATORY: Trace
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 27.4°C intact
REMARKS: If TPH exceed 5,000 mg/kg, run deeper horizons

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

If total BTEX exceeds 50 ppm, run deeper horizons

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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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'

continued ...

sample 213902 continued ...

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	RL
Chloride		**11300**	mg/Kg	4.00

Sample: 213905 - BH-1 20-21'

Param	Flag	Result	Units	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	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'

Param	Flag	Result	Units	RL
Chloride		**2660**	mg/Kg	4.00

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	RL
Chloride		**18600**	mg/Kg	4.00

Sample: 213913 - BH-2 20-21'

Param	Flag	Result	Units	RL
Chloride		**17800**	mg/Kg	4.00

Sample: 213914 - BH-2 30-31'

Param	Flag	Result	Units	RL
Chloride		**12200**	mg/Kg	4.00

Sample: 213915 - BH-2 40-41'

Param	Flag	Result	Units	RL
Chloride		**11300**	mg/Kg	4.00

Sample: 213916 - BH-2 50-51'

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

Sample: 213917 - BH-3 10-11'

Param	Flag	Result	Units	RL
Chloride		**15600**	mg/Kg	4.00

Sample: 213918 - BH-3 15-16'

Param	Flag	Result	Units	RL
Chloride		**15700**	mg/Kg	4.00

Sample: 213919 - BH-3 20-21'

Param	Flag	Result	Units	RL
Chloride		**15000**	mg/Kg	4.00

Sample: 213920 - BH-3 30-31'

Param	Flag	Result	Units	RL
Chloride		**14500**	mg/Kg	4.00

Sample: 213921 - BH-3 40-41'

Param	Flag	Result	Units	RL
Chloride		**11600**	mg/Kg	4.00

Sample: 213922 - BH-3 50-51'

Param	Flag	Result	Units	RL
Chloride		**3780**	mg/Kg	4.00

Sample: 213923 - BH-3 60-61'

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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.

Sample	Description	Matrix	Date Taken	Time Taken	Date 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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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.

Michael Abel

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

Standard Flags

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.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis 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.

Analytical Report

Sample: 213902 - BH-1 8-9'

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

Parameter	Flag	RL Result	Units	Dilution	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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**13500**	mg/Kg	100	4.00

Sample: 213904 - BH-1 15-16'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11300**	mg/Kg	100	4.00

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

continued ...

sample 213905 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**16500**	mg/Kg	100	4.00

Sample: 213906 - BH-1 25-26'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**14000**	mg/Kg	100	4.00

Sample: 213907 - BH-1 30-31'

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

Parameter	Flag	RL Result	Units	Dilution	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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7120**	mg/Kg	100	4.00

Sample: 213909 - 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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**2660**	mg/Kg	100	4.00

Sample: 213910 - BH-1 60-61'

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

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

Sample: 213911 - BH-2 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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**13100**	mg/Kg	100	4.00

Sample: 213912 - BH-2 15-16'

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**18600**	mg/Kg	100	4.00

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:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**17800**	mg/Kg	100	4.00

Sample: 213914 - BH-2 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

Parameter	Flag	Result	RL Units	Dilution	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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**11300**	mg/Kg	100	4.00

Sample: 213916 - BH-2 50-51'

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

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

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**15600**	mg/Kg	100	4.00

Sample: 213918 - BH-3 15-16'

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**15700**	mg/Kg	100	4.00

Sample: 213919 - BH-3 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:	AR

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**15000**	mg/Kg	100	4.00

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

Parameter	Flag	Result	RL Units	Dilution	RL
Chloride		**14500**	mg/Kg	100	4.00

Sample: 213921 - BH-3 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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11600**	mg/Kg	100	4.00

Sample: 213922 - 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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3780**	mg/Kg	100	4.00

Sample: 213923 - BH-3 60-61'

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

Parameter	Flag	RL Result	Units	Dilution	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

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

Method Blank (1) QC Batch: 65009

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

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

Method Blank (1) QC Batch: 65010

QC Batch:	65010	Date Analyzed:	2009-11-04	Analyzed By:	AR
Prep Batch:	55525	QC Preparation:	2009-11-04	Prepared By:	AR

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

Laboratory Control Spike (LCS-1)

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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.

Laboratory Control Spike (LCS-1)

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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: AR

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22200	mg/Kg	100	10000	11600	106	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	22400	mg/Kg	100	10000	11600	108	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 213923

QC Batch: 65010 Date Analyzed: 2009-11-04 Analyzed By: AR
Prep Batch: 55525 QC Preparation: 2009-11-04 Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10400	mg/Kg	100	10000	<218	104	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 65008 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65008 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-04

Standard (ICV-1)

QC Batch: 65009 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65009 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-04

Standard (ICV-1)

QC Batch: 65010 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65010 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-04

Order #: 9110402

Analysis Request of Chain of Custody Record

PAGE: 1 OF: 3

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St. Mary

SITE MANAGER: Weaver

PROJECT NO.: 114-640 0305

PROJECT NAME: St. Mary / Truck 1 TB, Loco Hills, NM.

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
213902	11-3-09		S		G	BH-1 8-9	1				✓													X				
903			S		G	BH-1 10-11	1				✓													X				
904			S		G	BH-1 15-16	1				✓													X				
905			S		G	BH-1 20-21	1				✓													X				
906			S		G	BH-1 25-26	1				✓													X				
907			S		G	BH-1 30-31	1				✓													X				
908			S		G	BH-1 40-41	1				✓													X				
909			S		G	BH-1 50-51	1				✓													X				
910			S		G	BH-1 60-61'	1				✓													X				
911	↓		S		G	BH-2 10-11'	1				✓													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 11-4-09 Time: 2:15 PM — RECEIVED BY: (Signature) — Date: 11.4.09 Time: 815

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLED BY: (Print & Initial) Dan Tovar — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

TETRA TECH CONTACT PERSON: Dan Tovar — Results by:

RECEIVING LABORATORY: Accu — ADDRESS: — CITY: — STATE: — ZIP: — CONTACT: — PHONE: — RECEIVED BY: (Signature) — DATE: — TIME:

RUSH Charges Authorized: (Yes) No

SAMPLE CONDITION WHEN RECEIVED: 4°C

REMARKS: RUSH

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

Order #: 9110402

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St. Mary | SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640305 | PROJECT NAME: St. Mary | INCA / TB Lea Co. NM.

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
213912	4-3-09		S		1	BH-2 15-16'	1				1													X				
913			S		1	BH-2 20-21'	1				1													X				
914			S		1	BH-2 30-31'	1				1													X				
915			S		1	BH-2 40-41'	1				1													X				
916			S		1	BH-2 50-51'	1				1													X				
917			S		1	BH-3 10-11'	1				1													X				
918			S		1	BH-3 15-16'	1				1													X				
919			S		1	BH-3 20-21'	1				1													X				
920			S		1	BH-3 30-31'	1				1													X				
921			S		1	BH-3 (40-41')	1				1													X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) — Date: 4-6-09 Time: 8:15 — RECEIVED BY: (Signature) — Date: 4-6-09 Time: 815

SAMPLED BY (Print & Initial): Ike Tavarez — Date: — Time:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: — OTHER:

RELINQUISHED BY: (Signature) — Date: — Time: — RECEIVED BY: (Signature) — Date: — Time:

TETRA TECH CONTACT PERSON: Ike Tavarez — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: — CITY: — STATE: — ZIP: — CONTACT: — PHONE: — DATE: — TIME:

RUSH Charges Authorized: (Yes) No

SAMPLE CONDITION WHEN RECEIVED: 4°C

REMARKS: Rush

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

Order #: 9110462

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 3 OF: 3

CLIENT NAME: St. Mary

SITE MANAGER: R. Tavarez

PROJECT NO.: 114-640 0305

PROJECT NAME: St Mary Inc. 1 TB

Lea Co. NM.

ANALYSIS REQUEST
(Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
23922A	3-05		S		1	BH-3 50-51'	1				1														X				
923A	3-05		S		1	BH-3 60-61'	1				1														X				

RELINQUISHED BY: (Signature) — Date: 11-4-05 Time: 845 — RECEIVED BY: (Signature) — Date: 11-4-05 Time: 845

SAMPLED BY: (Print & Initial) — Date: Time:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS — AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) — Date: Time: — RECEIVED BY: (Signature) — Date: Time:

TETRA TECH CONTACT PERSON: — Results by:

RECEIVING LABORATORY: Trace — RECEIVED BY: (Signature)

ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE: DATE: TIME:

RUSH Charges Authorized: Yes / No

SAMPLE CONDITION WHEN RECEIVED: 4°C

REMARKS: Rush

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

SITE INFORMATION

Report Type: Closure Report

General Site Information:	
Site:	Inca #1 Tank Battery
Company:	SM Energy Company
Section, Township and Range	Section 19, T18S, R32E Unit Letter - D
Lease Number:	
County:	Lea County
GPS:	32.73774° N, 103.81370° W
Surface Owner:	Federal
Mineral Owner:	WATER @ 240'
Directions:	From the intersection of Hwy 82 and Shugart Rd (Loco Hills), go south on Shugart Rd exactly 4 miles. Turn to the Southeast on a caliche road and travel southeast for another 4 miles until the road ends. Turn onto the road to the northeast and travel approximatly 1.1 miles to the Geronimo Federal Injection Station. Take the caliche road on the east side of the station to the north east and travel 0.4 miles. Turn east on caliche road and travel 0.15 miles to the location.

Release Data:	
Date Released:	9/23/2009
Type Release:	Produced Water
Source of Contamination:	3" Polyethylene transition
Fluid Released:	50 bbls
Fluids Recovered:	0 bbls

Official Communication:			
Name:	Chad McNeely		Aaron Hale
Company:	SM Energy Company		Tetra Tech
Address:	3300 N A St # 7-200		1910 N. Big Spring
P.O. Box			
City:	Midland, Texas		Midland, Texas
Phone number:	(432) 688-3124		(432) 682-4559
Fax:			
Email:	cmcneely@sm-energy.com		aaron.hale@tetratech.com

Ranking Criteria		
Depth to Groundwater:	***Ranking Score***	***Site Data***
<50 ft	20	
50-99 ft	10	
>100 ft.	0	**0**
WellHead Protection:	***Ranking Score***	***Site Data***
Water Source <1,000 ft., Private <200 ft.	*20*	
Water Source >1,000 ft., Private >200 ft.	***0***	*0*
Surface Body of Water:	***Ranking Score***	***Site Data***
<200 ft.	*20*	
200 ft - 1,000 ft.	10	
>1,000 ft.	**0**	*0*
Total Ranking Score:	**0**	

Acceptable Soil RRAL (mg/kg)		
Benzene	***Total BTEX***	***TPH***
10	50	5,000

HOBBS OCD

MAR 19 2012

RECEIVED

approved. 4/17/12
Geoff Leking
Env. Spec
NMOCD-DIST I

TETRA TECH

HOBBS OCD

MAR 19 2012

RECEIVED

January 4, 2012

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

Tetra Tech
1910 North Big Spring, Midland,TX 79705
Tel 432.682.4559 Fax 432.682.3946 www.tetratech.com

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

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^3 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

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

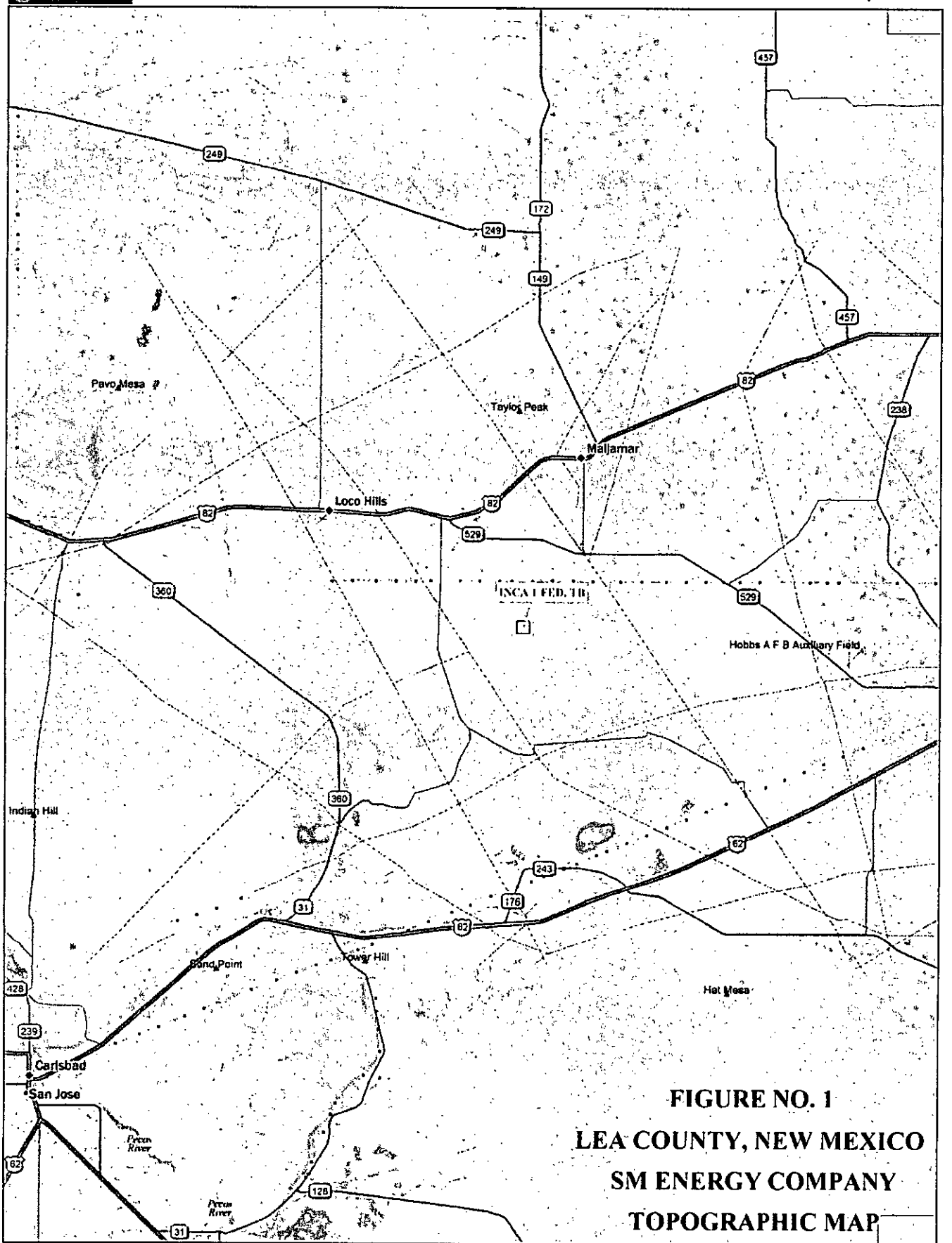


FIGURE NO. 1

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

TOPOGRAPHIC MAP

TN

MN (7.7°E)

Scale 1 : 400,000

1" = 6.31 mi

Data Zoom 9-0

DeLORME

Topo USA® 8

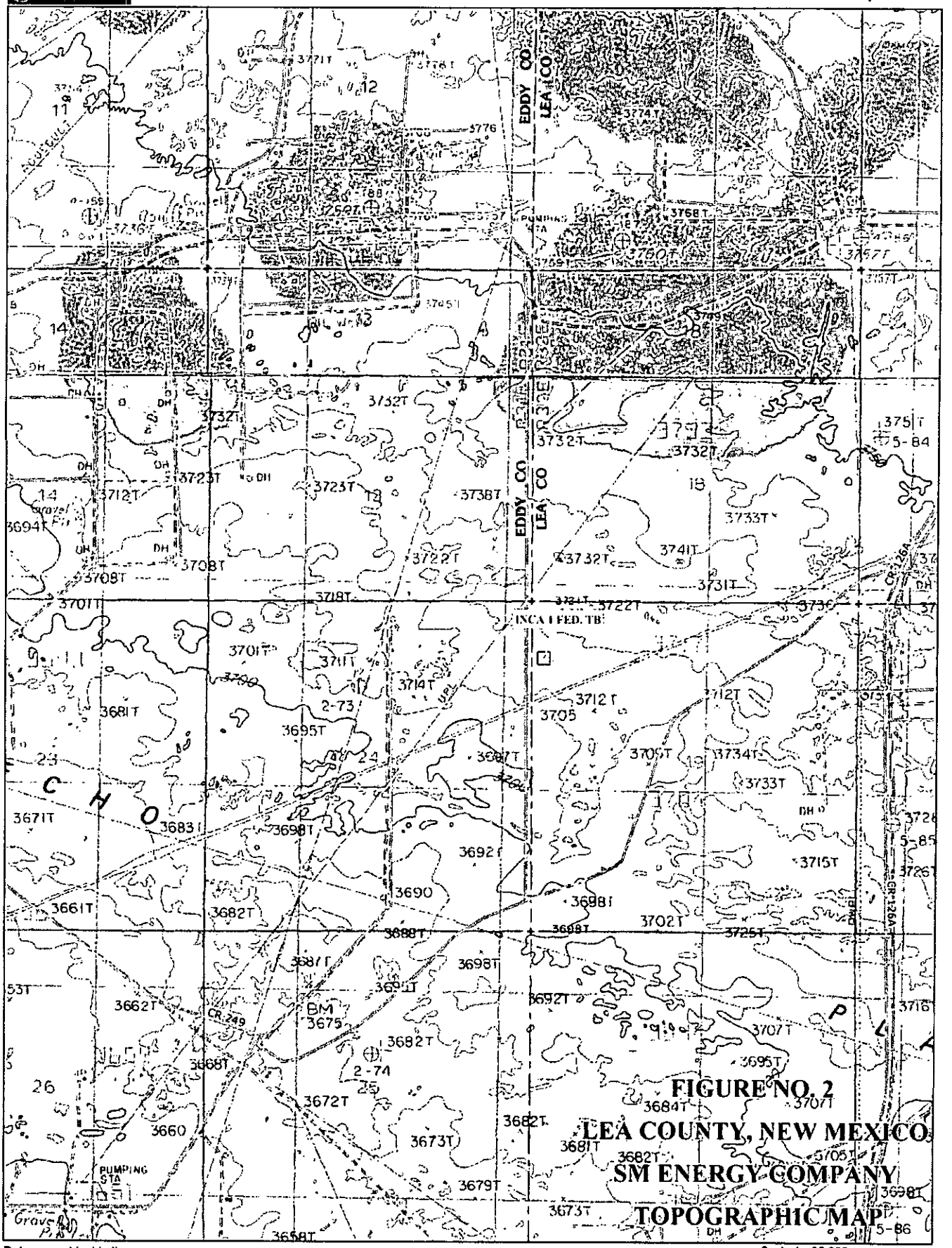


FIGURE NO. 2

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

TOPOGRAPHIC MAP

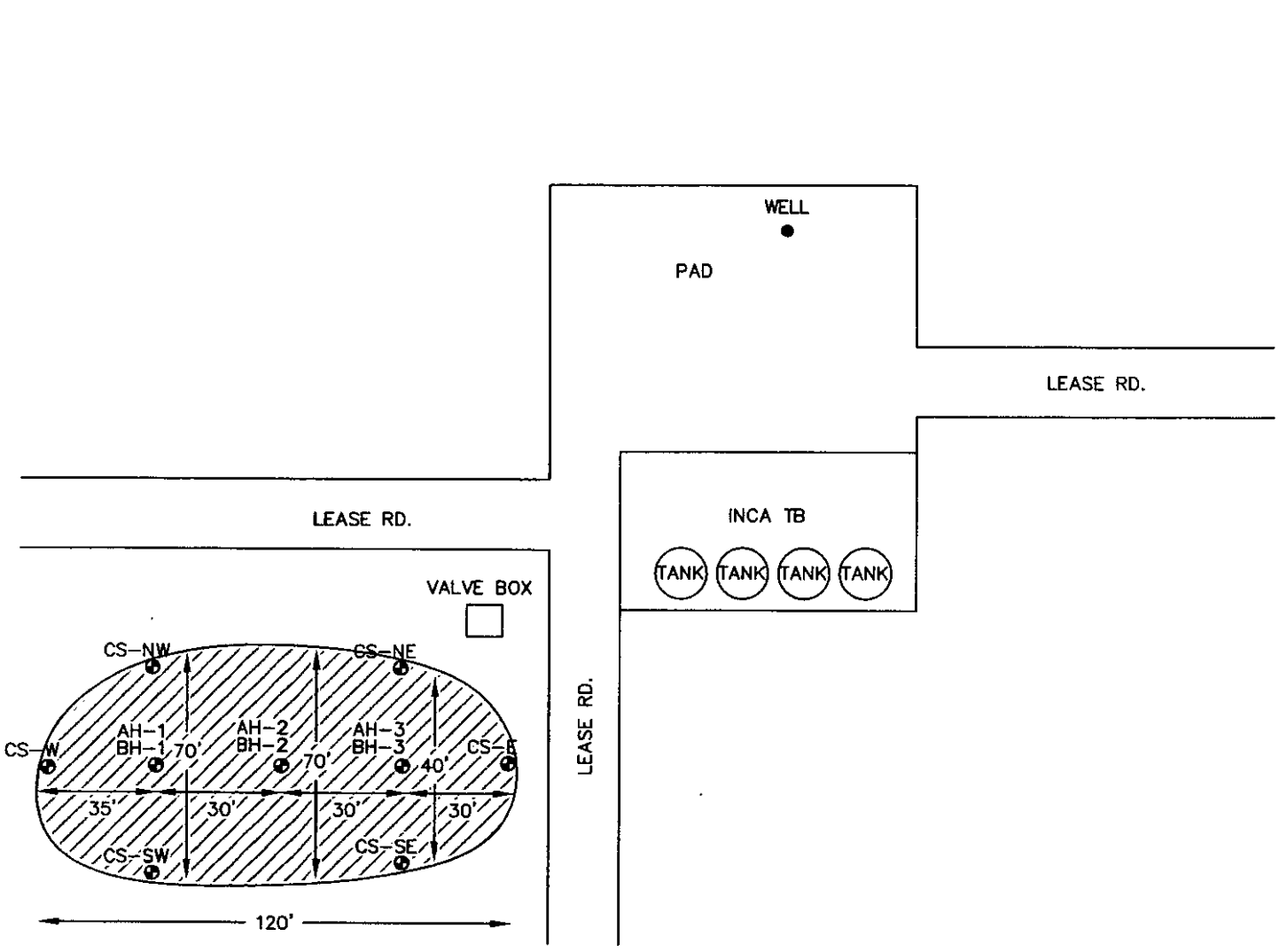
TN

MN (7.7°E)

Scale 1 : 25,000

1" = 2,083.3 ft

Data Zoom 13-0



SPILL AREA
AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
CONFIRMATION SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 3

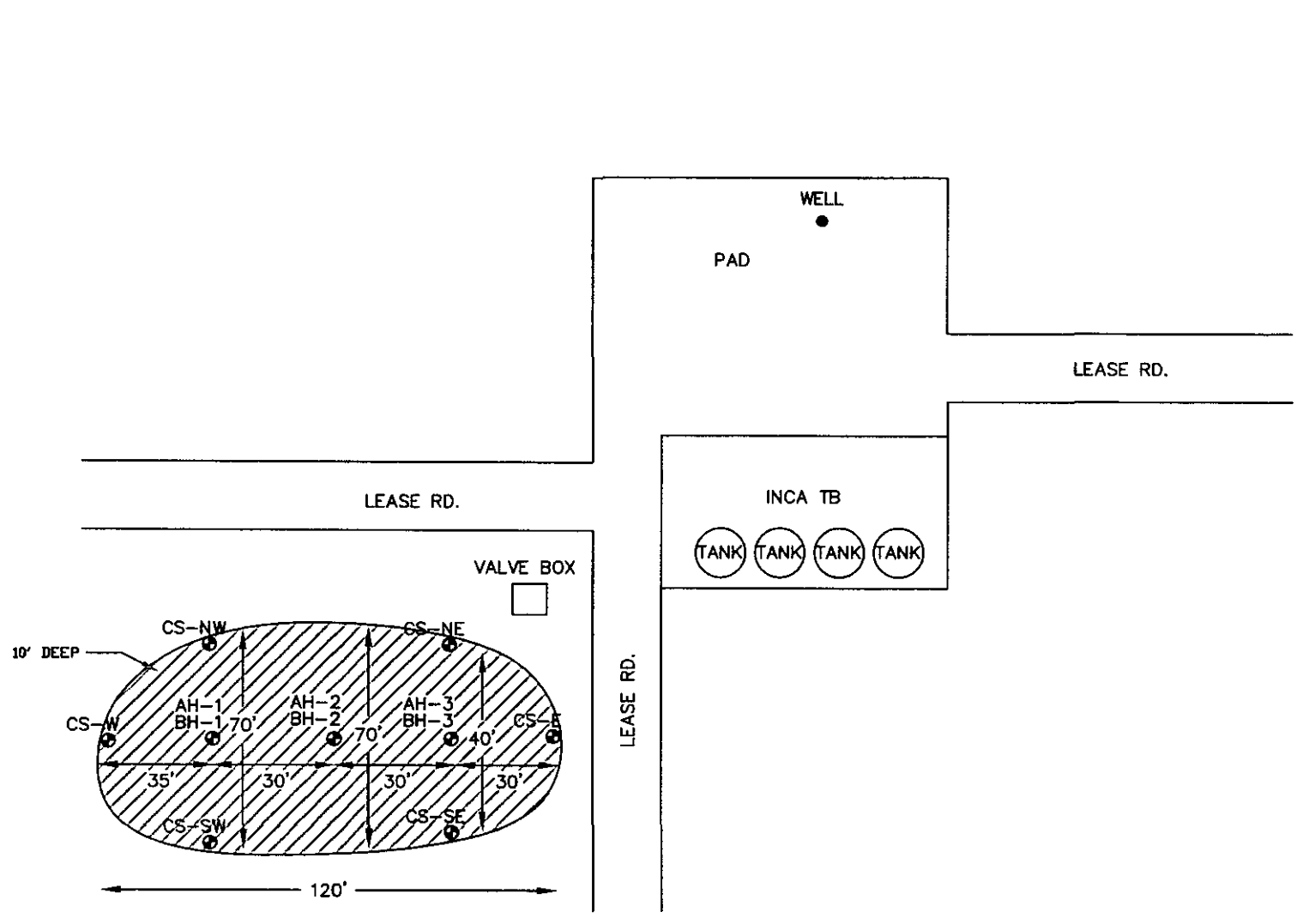
LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

INCA 1 FED. TB

DATE: 10/01/2011
DWN. BY: IM
FILE: H:\ST. MARY\...

TETRA TECH, INC.
MIDLAND, TEXAS



EXCAVATED AREA
AUGER HOLE SAMPLE LOCATIONS
BORE HOLE SAMPLE LOCATIONS
CONFIRMATION SAMPLE LOCATIONS

NOT TO SCALE

FIGURE NO. 4

LEA COUNTY, NEW MEXICO

SM ENERGY COMPANY

DATE: 10/01/2011
DWN. BY: IM
FILE: H:\ST. MARY\0400305

INCA 1 FED. TB

TETRA TECH, INC.
MIDLAND, TEXAS

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

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-1	10/5/2009	0-1		X	<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	2,060
		1-1.5		X	-	-	-	-	-	-	-	2,070
		2-2.5		X	-	-	-	-	-	-	-	5,760
		3-3.5		X	-	-	-	-	-	-	-	10,900
		4-4.5		X	-	-	-	-	-	-	-	11,100
		5-5.5		X	-	-	-	-	-	-	-	19,700
		6-6.5		X	-	-	-	-	-	-	-	27,400
BH-1	11/3/2009	8-9		X	-	-	-	-	-	-	-	25,000
		10-11		X	-	-	-	-	-	-	-	13,500
		15-16	X		-	-	-	-	-	-	-	11,300
		20-21	X		-	-	-	-	-	-	-	16,500
		25-26	X		-	-	-	-	-	-	-	14,000
		30-31	X		-	-	-	-	-	-	-	11,000
		40-40	X		-	-	-	-	-	-	-	7,120
		50-51	X		-	-	-	-	-	-	-	2,660
		60-61	X		-	-	-	-	-	-	-	<200

Table 1

SM Energy Company

Inca 1 Tank Battery

Section 19, Township 18 South, Range 32 East

LEA COUNTY, NEW MEXICO

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-2	10/5/2009	0-1		X	<50.0	<1.0	<50.0	<0.01	<0.01	<0.01	<0.01	4,530
		1-1.5		X	-	-	-	-	-	-	-	4,930
		2-2.5		X	-	-	-	-	-	-	-	8,060
		3-3.5		X	-	-	-	-	-	-	-	12,800
		4-4.5		X	-	-	-	-	-	-	-	12,200
		5-5.5		X	-	-	-	-	-	-	-	16,000
		6-6.5		X	-	-	-	-	-	-	-	23,400
BH-2	11/3/2009	10-11		X	-	-	-	-	-	-	-	13,100
		15-16	X		-	-	-	-	-	-	-	18,600
		20-21	X		-	-	-	-	-	-	-	17,800
		30-31	X		-	-	-	-	-	-	-	12,200
		40-40	X		-	-	-	-	-	-	-	11,300
		50-51	X		-	-	-	-	-	-	-	<200

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

Sample ID	Date Sampled	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	DRO	GRO	Total					
AH-3	10/5/2009	0-1		X	52.0	<1.0	52.0	<0.01	<0.01	<0.01	<0.01	4,230
		1-1.5		X	-	-	-	-	-	-	-	10,100
		2-2.5		X	-	-	-	-	-	-	-	6,930
		3-3.5		X	-	-	-	-	-	-	-	10,200
		4-4.5		X	-	-	-	-	-	-	-	11,400
		5-5.5		X	-	-	-	-	-	-	-	29,200
BH-3	11/3/2009	10-11		X	-	-	-	-	-	-	-	15,600
		15-16	X		-	-	-	-	-	-	-	15,700
		20-21	X		-	-	-	-	-	-	-	15,000
		30-31	X		-	-	-	-	-	-	-	14,500
		40-40	X		-	-	-	-	-	-	-	11,600
		50-51	X		-	-	-	-	-	-	-	3,780
		60-61	X		-	-	-	-	-	-	-	<200
CS-NE	8/29/2011	-	X		-	-	-	-	-	-	-	222
CS-E	8/31/2011	-	X		-	-	-	-	-	-	-	374

(-) Not Analyzed
Excavated Material
40 Mil Liner

APPENDIX A

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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.

Sample	Description	Matrix	Date Taken	Time Taken	Date 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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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.

Michael Abel

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

Standard Flags

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 2009-10-05 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.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis 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 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.

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

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

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:	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

Parameter	Flag	RL Result	Units	Dilution	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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		104	mg/Kg	1	100	104	13.2 - 219.3

Sample: 211596 - AH-1 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

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)		1.97	mg/Kg	1	2.00	98	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		1.98	mg/Kg	1	2.00	99	61.7 - 119.9

Sample: 211597 - AH-1 1-1.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2070**	mg/Kg	100	4.00

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**5760**	mg/Kg	100	4.00

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10900**	mg/Kg	100	4.00

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11100**	mg/Kg	100	4.00

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**19700**	mg/Kg	100	4.00

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**27400**	mg/Kg	100	4.00

Sample: 211603 - AH-2 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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	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: 211603 - AH-2 0-1'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4530**	mg/Kg	100	4.00

Sample: 211603 - AH-2 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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

Sample: 211603 - AH-2 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

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)		2.02	mg/Kg	1	2.00	101	65.3 - 109.9
4-Bromofluorobenzene (4-BFB)		2.01	mg/Kg	1	2.00	100	61.7 - 119.9

Sample: 211604 - AH-2 1'-1.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4930**	mg/Kg	100	4.00

Sample: 211605 - AH-2 2'-2.5'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**8060**	mg/Kg	100	4.00

Sample: 211606 - AH-2 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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**12800**	mg/Kg	100	4.00

Sample: 211607 - AH-2 4'-4.5'

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**12200**	mg/Kg	100	4.00

Sample: 211608 - AH-2 5'-5.5'

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**16000**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**23400**	mg/Kg	100	4.00

Sample: 211610 - AH-3 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

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

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	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:	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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**4230**	mg/Kg	100	4.00

Sample: 211610 - AH-3 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:	kg
Prep Batch:	54818	Sample Preparation:	2009-10-06	Prepared By:	kg

Parameter	Flag	RL Result	Units	Dilution	RL
DRO		**52.0**	mg/Kg	1	50.0

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		106	mg/Kg	1	100	106	13.2 - 219.3

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

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)		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:	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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10100**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL 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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**10200**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11400**	mg/Kg	100	4.00

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

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 Preparation:	2009-10-07	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**29200**	mg/Kg	100	4.00

Method Blank (1) QC Batch: 64188

QC Batch:	64188	Date Analyzed:	2009-10-06	Analyzed By:	kg
Prep Batch:	54818	QC Preparation:	2009-10-06	Prepared By:	kg

Parameter	Flag	MDL Result	Units	RL
DRO		<5.86	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		99.4	mg/Kg	1	100	99	13 - 178.5

Method Blank (1) QC Batch: 64189

QC Batch:	64189	Date Analyzed:	2009-10-05	Analyzed By:	AG
Prep Batch:	54819	QC Preparation:	2009-10-05	Prepared By:	AG

Parameter	Flag	MDL Result	Units	RL
Benzene		<0.00410	mg/Kg	0.01

continued ...

method blank continued ...

Parameter	Flag	MDL Result	Units	RL
Toluene		<0.00310	mg/Kg	0.01
Ethylbenzene		<0.00240	mg/Kg	0.01
Xylene		<0.00650	mg/Kg	0.01

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		1.80	mg/Kg	1	2.00	90	64.9 - 122.7
4-Bromofluorobenzene (4-BFB)		1.57	mg/Kg	1	2.00	78	43.9 - 121.9

Method Blank (1) QC Batch: 64190

QC Batch: 64190 Date Analyzed: 2009-10-05 Analyzed By: AG
Prep Batch: 54819 QC Preparation: 2009-10-05 Prepared By: AG

Parameter	Flag	MDL Result	Units	RL
GRO		<0.396	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		2.04	mg/Kg	1	2.00	102	66.2 - 125
4-Bromofluorobenzene (4-BFB)		1.66	mg/Kg	1	2.00	83	62 - 120.5

Method Blank (1) QC Batch: 64315

QC Batch: 64315 Date Analyzed: 2009-10-09 Analyzed By: AR
Prep Batch: 54853 QC Preparation: 2009-10-07 Prepared By: AR

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

Method Blank (1) QC Batch: 64316

QC Batch: 64316 Date Analyzed: 2009-10-09 Analyzed By: AR
Prep Batch: 54854 QC Preparation: 2009-10-07 Prepared By: AR

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

Laboratory Control Spike (LCS-1)

QC Batch: 64188 | Date Analyzed: 2009-10-06 | Analyzed By: kg
Prep Batch: 54818 | QC Preparation: 2009-10-06 | Prepared By: kg

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	196	mg/Kg	1	250	<5.86	78	57.4 - 133.4

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	190	mg/Kg	1	250	<5.86	76	57.4 - 133.4	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
n-Triacontane	107	102	mg/Kg	1	100	107	102	48.5 - 146.7

Laboratory Control Spike (LCS-1)

QC Batch: 64189 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.85	mg/Kg	1	2.00	<0.00410	92	75.4 - 115.7
Toluene	1.82	mg/Kg	1	2.00	<0.00310	91	78.4 - 113.6
Ethylbenzene	1.74	mg/Kg	1	2.00	<0.00240	87	76 - 114.2
Xylene	5.24	mg/Kg	1	6.00	<0.00650	87	76.9 - 113.6

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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 on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.78	1.80	mg/Kg	1	2.00	89	90	65 - 122.9
4-Bromofluorobenzene (4-BFB)	1.80	1.80	mg/Kg	1	2.00	90	90	43.8 - 124.9

Laboratory Control Spike (LCS-1)

QC Batch: 64190 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.1	mg/Kg	1	20.0	<0.396	86	52.5 - 114.3

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	17.6	mg/Kg	1	20.0	<0.396	88	52.5 - 114.3	3	20

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

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	2.02	2.03	mg/Kg	1	2.00	101	102	66.2 - 128.7
4-Bromofluorobenzene (4-BFB)	1.83	1.81	mg/Kg	1	2.00	92	90	64.1 - 127.4

Laboratory Control Spike (LCS-1)

QC Batch: 64315 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54853 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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.

Laboratory Control Spike (LCS-1)

QC Batch: 64316 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54854 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.1	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.

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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: 211151

QC Batch: 64188 | Date Analyzed: 2009-10-06 | Analyzed By: kg
Prep Batch: 54818 | QC Preparation: 2009-10-06 | Prepared By: kg

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	220	mg/Kg	1	250	<5.86	88	35.2 - 167.1

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO	228	mg/Kg	1	250	<5.86	91	35.2 - 167.1	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Triacontane	101	102	mg/Kg	1	100	101	102	34.5 - 178.4

Matrix Spike (MS-1) Spiked Sample: 211517

QC Batch: 64189 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene	1.90	mg/Kg	1	2.00	<0.00410	95	57.7 - 140.7
Toluene	1.87	mg/Kg	1	2.00	<0.00310	94	53.4 - 146.6
Ethylbenzene	1.84	mg/Kg	1	2.00	<0.00240	92	62.1 - 141.6
Xylene	5.64	mg/Kg	1	6.00	<0.00650	94	61.2 - 142.7

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene	2.01	mg/Kg	1	2.00	<0.00410	100	57.7 - 140.7	6	20
Toluene	1.99	mg/Kg	1	2.00	<0.00310	100	53.4 - 146.6	6	20
Ethylbenzene	1.97	mg/Kg	1	2.00	<0.00240	98	62.1 - 141.6	7	20
Xylene	5.99	mg/Kg	1	6.00	<0.00650	100	61.2 - 142.7	6	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
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: 211517

QC Batch: 64190 | Date Analyzed: 2009-10-05 | Analyzed By: AG
Prep Batch: 54819 | QC Preparation: 2009-10-05 | Prepared By: AG

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	17.6	mg/Kg	1	20.0	1.6	80	10 - 198.3

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO	18.2	mg/Kg	1	20.0	1.6	83	10 - 198.3	3	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD 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: 211605

QC Batch: 64315 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54853 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	18700	mg/Kg	100	10000	8060	106	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	18800	mg/Kg	100	10000	8060	107	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: 211615

QC Batch: 64316 | Date Analyzed: 2009-10-09 | Analyzed By: AR
Prep Batch: 54854 | QC Preparation: 2009-10-07 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	40400	mg/Kg	100	10000	29200	112	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	40600	mg/Kg	100	10000	29200	114	85 - 115	0	20

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

Standard (CCV-2)

QC Batch: 64188 Date Analyzed: 2009-10-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	236	94	80 - 120	2009-10-06

Standard (CCV-3)

QC Batch: 64188 Date Analyzed: 2009-10-06 Analyzed By: kg

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	249	100	80 - 120	2009-10-06

Standard (CCV-3)

QC Batch: 64189 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0956	96	80 - 120	2009-10-05
Toluene		mg/Kg	0.100	0.0932	93	80 - 120	2009-10-05
Ethylbenzene		mg/Kg	0.100	0.0877	88	80 - 120	2009-10-05
Xylene		mg/Kg	0.300	0.265	88	80 - 120	2009-10-05

Standard (CCV-4)

QC Batch: 64189 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		mg/Kg	0.100	0.0908	91	80 - 120	2009-10-05
Toluene		mg/Kg	0.100	0.0885	88	80 - 120	2009-10-05
Ethylbenzene		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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	1.02	102	80 - 120	2009-10-05

Standard (CCV-3)

QC Batch: 64190 Date Analyzed: 2009-10-05 Analyzed By: AG

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date 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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.0	99	85 - 115	2009-10-09

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

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	102	102	85 - 115	2009-10-09

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St Marys

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-640630 5

PROJECT NAME: St Marys / Incu 1 TB Ire Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 MOD. (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
211596	10/5		S		X	AH-1 0-1'	1					X	X	X											X				
597						AH-1 1'-1.5'																							
598						AH-1 2'-2.5'																							
599						AH-1 3'-3.5'																							
600						AH-1 4'-4.5'																							
601						AH-1 5'-5.5'																							
602						AH-1 6'-6.5'																							
603						AH-2 0-1'							X	X															
604						AH-2 1'-1.5'																							
605						AH-2 2'-2.5'																							

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature) Date: 10/5/09 Time: 15:50
RECEIVED BY: (Signature) Date: 10/5/09 Time: 15:50
SAMPLED BY: (Print & Initial) JT / RM Date: 10/5/09 Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:

RECEIVING LABORATORY: Trai
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 27.4°c intact

REMARKS: If TPH exceeds 5,000 mg/kg, run deeper horizons
If total BTEX exceeds 50 ppm, run deeper horizons

• Straight from field, All tests-Midland

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

Order #: 7100529

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 2 OF: 2

CLIENT NAME: St Marys

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6400305

PROJECT NAME: St Marys / Inca 1 TB Lea Co, NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH TX1005 (Ext. to C35)	TPH 8015 MOD.	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chlorides	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
211 6006	10/5		S		X	AH-2	3'-3.5'																			X				
607						AH-2	4'-4.5'																							
608						AH-2	5'-5.5'																							
609						AH-2	6'-6.5'																							
610						AH-3	0-1'						X	X																
611						AH-3	1'-1.5'																							
612						AH-3	2'-2.5'																							
613						AH-3	3'-3.5'																							
614						AH-3	4'-4.5'																							
615						AH-3	5'-5.5'																							

RELINQUISHED BY: (Signature) Date: 10/5/09 Time: 1550

RECEIVED BY: (Signature) Date: 10/5/09 Time: 15:50

SAMPLED BY: (Print & Initial) ST/BM Date: 10/5/09 Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 27.4°C intact

REMARKS: If TPH exceed 5,000 mg/kg, run deeper horizons

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

If total BTEX exceeds 50 ppm, run deeper horizons

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
6015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

Certifications

WBENC: 237019 **HUB:** 1752439743100-86536 **DBE:** VN 20657
NCTRCA WFWB38444Y0909

NELAP Certifications

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

Analytical and Quality Control Report

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.

Sample	Description	Matrix	Date Taken	Time Taken	Date 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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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.

Michael Abel

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

Standard Flags

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.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis 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.

Analytical Report

Sample: 213902 - BH-1 8-9'

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

Parameter	Flag	RL Result	Units	Dilution	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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**13500**	mg/Kg	100	4.00

Sample: 213904 - BH-1 15-16'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11300**	mg/Kg	100	4.00

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

continued ...

sample 213905 continued ...

Parameter	Flag	RL Result	Units	Dilution	RL
Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**16500**	mg/Kg	100	4.00

Sample: 213906 - BH-1 25-26'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**14000**	mg/Kg	100	4.00

Sample: 213907 - BH-1 30-31'

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

Parameter	Flag	RL Result	Units	Dilution	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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**7120**	mg/Kg	100	4.00

Sample: 213909 - 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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**2660**	mg/Kg	100	4.00

Sample: 213910 - BH-1 60-61'

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

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

Sample: 213911 - BH-2 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:	AR
Prep Batch:	55523	Sample Preparation:	2009-11-04	Prepared By:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**13100**	mg/Kg	100	4.00

Sample: 213912 - BH-2 15-16'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**18600**	mg/Kg	100	4.00

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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**17800**	mg/Kg	100	4.00

Sample: 213914 - BH-2 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

Parameter	Flag	RL Result	Units	Dilution	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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11300**	mg/Kg	100	4.00

Sample: 213916 - BH-2 50-51'

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

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

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**15600**	mg/Kg	100	4.00

Sample: 213918 - BH-3 15-16'

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**15700**	mg/Kg	100	4.00

Sample: 213919 - BH-3 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:	AR

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**15000**	mg/Kg	100	4.00

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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**14500**	mg/Kg	100	4.00

Sample: 213921 - BH-3 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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**11600**	mg/Kg	100	4.00

Sample: 213922 - 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

Parameter	Flag	RL Result	Units	Dilution	RL
Chloride		**3780**	mg/Kg	100	4.00

Sample: 213923 - BH-3 60-61'

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

Parameter	Flag	RL Result	Units	Dilution	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

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

Method Blank (1) QC Batch: 65009

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

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

Method Blank (1) QC Batch: 65010

QC Batch: 65010 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55525 | QC Preparation: 2009-11-04 | Prepared By: AR

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

Laboratory Control Spike (LCS-1)

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	100	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.

Laboratory Control Spike (LCS-1)

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

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	101	mg/Kg	1	100	<2.18	101	85 - 115

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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: AR

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

Param	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. 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.

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD 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

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	22200	mg/Kg	100	10000	11600	106	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	22400	mg/Kg	100	10000	11600	108	85 - 115	1	20

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

Matrix Spike (MS-1) Spiked Sample: 213923

QC Batch: 65010 | Date Analyzed: 2009-11-04 | Analyzed By: AR
Prep Batch: 55525 | QC Preparation: 2009-11-04 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	10200	mg/Kg	100	10000	<218	102	85 - 115

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

Param	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride	10400	mg/Kg	100	10000	<218	104	85 - 115	2	20

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

Standard (ICV-1)

QC Batch: 65008 | Date Analyzed: 2009-11-04 | Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65008 | Date Analyzed: 2009-11-04 | Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-11-04

Standard (ICV-1)

QC Batch: 65009 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65009 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-04

Standard (ICV-1)

QC Batch: 65010 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.2	99	85 - 115	2009-11-04

Standard (CCV-1)

QC Batch: 65010 Date Analyzed: 2009-11-04 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-11-04

Order #: 9110402

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St. Mary
SITE MANAGER: Ike Tavarez
PROJECT NO.: 114-6400305
PROJECT NAME: St. Mary / Tuck 1 TB, Lea Co. NM.

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
213902/1	4-3-09		S		✓	BH-1 8-9	1				✓														X				
903	↓		S		✓	BH-1 10-11	1				✓														X				
904			S		✓	BH-1 15-16	1				✓														X				
905			S		✓	BH-1 20-21	1				✓														X				
906			S		✓	BH-1 25-26	1				✓														X				
907			S		✓	BH-1 30-31	1				✓														X				
908			S		✓	BH-1 40-41	1				✓														X				
909			S		✓	BH-1 50-51	1				✓														X				
910			S		✓	BH-1 60-61'	1				✓														X				
911	↓		S		✓	BH-2 10-11'	1				✓														X				

RELINQUISHED BY: (Signature) [signature] Date: 4-4-09 Time: 8:15 am
RECEIVED BY: (Signature) [signature] Date: 4-4-09 Time: 815
SAMPLED BY: (Print & Initial) [signature] Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: [signature]
Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: (Yes) No

SAMPLE CONDITION WHEN RECEIVED: 4°C
REMARKS: RUSH

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

Order #: 9110402

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St. Mary
SITE MANAGER: Joe Tarver
PROJECT NO.: 114-660305
PROJECT NAME: St. Mary / INCA / TB
Lea Co. NM.

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
213912	4-3-09		S		1	BH-2 15-16'	1				1														X				
913			S		1	BH-2 20-21'	1				1														X				
914			S		1	BH-2 30-31'	1				1														X				
915			S		1	BH-2 40-41'	1				1														X				
916			S		1	BH-2 50-51'	1				1														X				
917			S		1	BH-3 10-11'	1				1														X				
918			S		1	BH-3 15-16'	1				1														X				
919			S		1	BH-3 20-21'	1				1														X				
920			S		1	BH-3 30-31'	1				1														X				
921			S		1	BH-3 (40-41')	1				1														X				

RELINQUISHED BY: (Signature) Date: 4-6-09 Time: 8:15
RECEIVED BY: (Signature) Date: 4-6-09 Time: 9:15
SAMPLED BY: (Print & Initial) Joe Tarver Date: Time:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS
AIRBILL #:
OTHER:

RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:
TETRA TECH CONTACT PERSON: Joe Tarver
Results by:

RECEIVING LABORATORY: Trace
ADDRESS:
CITY: STATE: ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature)
DATE: TIME:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 4°C
REMARKS: Rush

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

Order #: 9110402

Analysis Request of Chain of Custody Record

PAGE: 3 OF: 3

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: St. Mary

SITE MANAGER: I.C. Tavarez

PROJECT NO.: 114-640 0305

PROJECT NAME: St Mary Area 1 TB

LAB I.D. NUMBER	DATE	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
23922A	3-09		S		1	BH-3 50-51'	1				1														X				
923A	3-09		S		1	BH-3 60-61'	1				1														X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: 11-4-09 Time: 8:45 AM	RECEIVED BY: (Signature)	Date: 11-4-09 Time: 8:45
SAMPLED BY: (Print & Initial)	Date: Time:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS	AIRBILL #: OTHER:		
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
TETRA TECH CONTACT PERSON:	Results by:		
RECEIVING LABORATORY: Xenco ADDRESS: CITY: STATE: ZIP: CONTACT: PHONE:	RECEIVED BY: (Signature) DATE: TIME:		RUSH Charges Authorized: Yes No
SAMPLE CONDITION WHEN RECEIVED: 4°C	REMARKS: Rush		

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

TRACEANALYSIS, INC.

6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800•378•1296 806•794•1296 FAX 806•794•1298
200 East Sunset Road, Suite E El Paso, Texas 79922 888•588•3443 915•585•3443 FAX 915•585•4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432•689•6301 FAX 432•689•6313
8015 Harris Parkway, Suite 110 Ft. Worth, Texas 76132 817•201•5260
E-Mail: lab@traceanalysis.com

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., NM
Project Name: St. Mary/Inca #1 Tank Battery
Project Number: 114-6400305

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

Sample	Description	Matrix	Date Taken	Time Taken	Date 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.

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

Report Contents

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.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis 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.

Analytical Report

Sample: 277446 - CS-NE

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84900	Date Analyzed:	2011-09-21	Analyzed By:	AR
Prep Batch:	72089	Sample Preparation:	2011-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**222**	mg/Kg	50	4.00

Sample: 277447 - CS-E

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	84900	Date Analyzed:	2011-09-21	Analyzed By:	AR
Prep Batch:	72089	Sample Preparation:	2011-09-20	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**374**	mg/Kg	50	4.00

Method Blanks

Method Blank (1) QC Batch: 84900

QC Batch:	84900	Date Analyzed:	2011-09-21	Analyzed By:	AR
Prep Batch:	72089	QC Preparation:	2011-09-16	Prepared By:	AR

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

Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch: 84900 | Date Analyzed: 2011-09-21 | Analyzed By: AR
Prep Batch: 72089 | QC Preparation: 2011-09-16 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			95.3	mg/Kg	1	100	<3.85	95	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			105	mg/Kg	1	100	<3.85	105	85 - 115	10	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: 277494

QC Batch: 84900 | Date Analyzed: 2011-09-21 | Analyzed By: AR
Prep Batch: 72089 | QC Preparation: 2011-09-16 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			9890	mg/Kg	100	10000	<385	99	79.4 - 120.6

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			10300	mg/Kg	100	10000	<385	103	79.4 - 120.6	4	20

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

Calibration Standards

Standard (ICV-1)

QC Batch: 84900 | Date Analyzed: 2011-09-21 | Analyzed By: AR

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	102	102	85 - 115	2011-09-21

Standard (CCV-1)

QC Batch: 84900 | Date Analyzed: 2011-09-21 | Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	97.8	98	85 - 115	2011-09-21

Appendix

Laboratory Certifications

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

Standard Flags

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

Attachments

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

XTO # 110160

Analysis Request of Chain of Custody Record

TETRA TECH
1910 N. Big Spring St.
Midland, Texas 79705
(432) 682-4559 • Fax (432) 682-3946

PAGE: 1 OF: 1

ANALYSIS REQUEST
(Circle or Specify Method No.)

CLIENT NAME:	SITE MANAGER:
Dr Mary	Aaron Hale

PROJECT NO.:	PROJECT NAME:
114-6400305	Inca #1 Tank Battery Lea Co NM

LAB I.D. NUMBER	DATE 2011	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/824	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
277446	8/29		S		X	CS-NE	1																	X				
447	8/31		S		X	CS-E	1																	X				

RELINQUISHED BY: (Signature)	Date: 9-15-11 Time: 15:00	RECEIVED BY: (Signature)	Date: 9/15/11 Time: 15:00
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:
RELINQUISHED BY: (Signature)	Date: Time:	RECEIVED BY: (Signature)	Date: Time:

SAMPLED BY: (Print & Initial) TF Date: 8-29-11 Time:

SAMPLE SHIPPED BY: (Circle) FEDEX BUS HAND DELIVERED UPS AIRBILL #: OTHER:

TETRA TECH CONTACT PERSON: Aaron Hale

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace RECEIVED BY: (Signature)
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE: DATE: TIME:

SAMPLE CONDITION WHEN RECEIVED: 17.6C intact

REMARKS: All tests Midland

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