TETRA TECH

MAY 12 2009

March 24, 2009

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

Re: Assessment Report and Closure Request for the St. Mary Land & Exploration Company, Parkway Delaware Unit #514 Well, Unit O, Section 35, Township 19 South, Range 29 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. was contacted by St. Mary Land & Exploration Company (St. Mary) to assess a spill from the Parkway Delaware Unit #514 Well located in Unit O, Section 35, Township 19 South, Range 29 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32° .61323, W 104°.04382. 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 February 19, 2009. Approximately 15 barrels of oil and 15 barrels of produced water were released from the stuffing box of the well. A Hot Oiler, after hot watering the flowline, improperly adjusted the Baird backpressure valve causing the tubing to over pressure and blow the stuffing box packing out. The stuffing box was repaired and a vacuum truck was utilized to recover 6 barrels of oil and 6 barrels of produced water. The impacted caliche on the pad was excavated and hauled to proper disposal. The initial C-141 is enclosed in Appendix A.

Groundwater

The New Mexico Office of the State Engineer iWATERS database listed one well in Section 35 with a reported depth to water of 110' below ground surface (bgs). The site elevation is approximately 3,320 feet above sea level (asl) which is consistent with the average elevations in Section 35. As such, based on the depth to groundwater and the relative elevation of the location, it appears the groundwater for the Site appears to be greater than 100' feet bgs. The State Engineer Report is shown in Appendix B.

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

TETRA TECH

Regulatory

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

Soil Assessment and Results

On March 4, 2009, Tetra Tech personnel inspected and sampled the spill area on the pad. A total of six (6) auger holes (AH-1 through AH-6) were installed using a stainless steel hand auger to assess the impacted soils. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. All of the samples analyzed were below the RRAL for both BTEX and TPH. Additionally, all of the chloride concentrations were below 200 mg/kg. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The spill area and the auger hole locations are shown on Figure 3.

Closure Request

Based upon the remedial work performed and the results of the assessment, St. Mary Land & Exploration Company requests closure of this site. A copy of the Final C-141 is included in Appendix A. If you require any additional information or have any questions or comments concerning this report, please call at (432) 682-4559.

Respectfully submitted,
TETRA TECH, Inc.

Tim Reed

Tim Reed, P.G.
Sr. Project Manager

cc: Tom Morrow – St. Mary Land
Don Riggs – St. Mary Land
Jim Amos - BLM

FIGURES

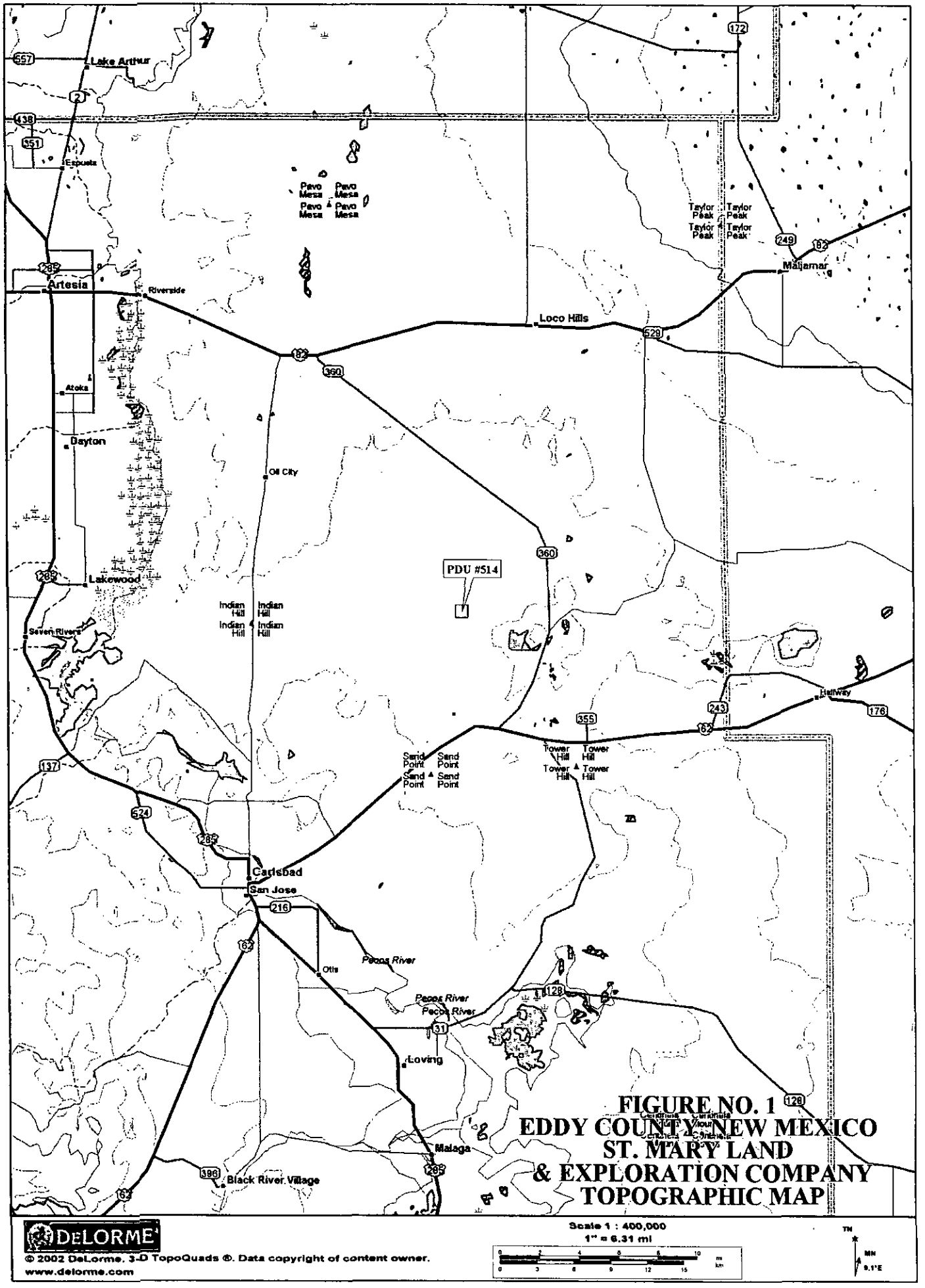


FIGURE NO. 1
EDDY COUNTY, NEW MEXICO
ST. MARY LAND & EXPLORATION COMPANY
TOPOGRAPHIC MAP

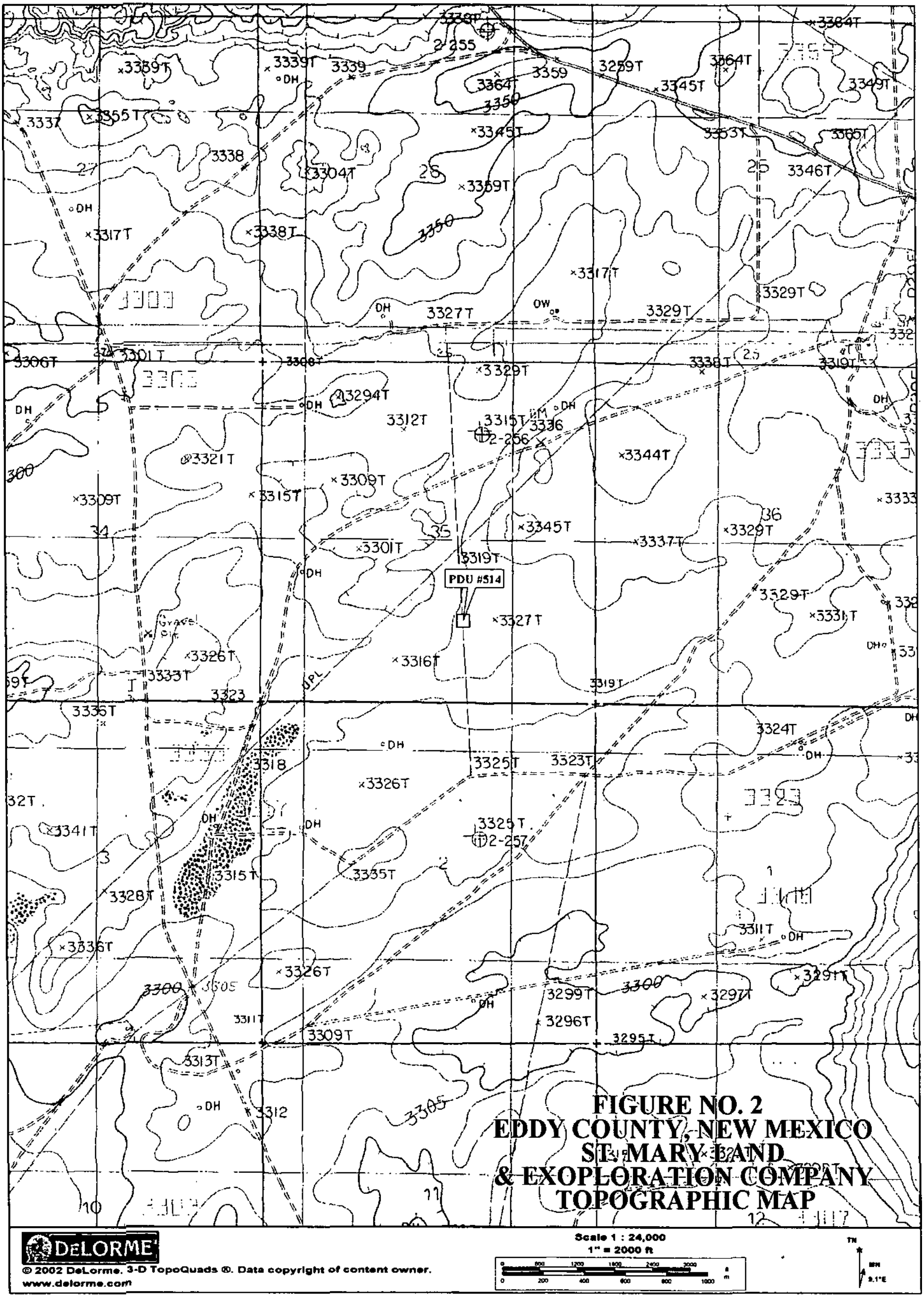
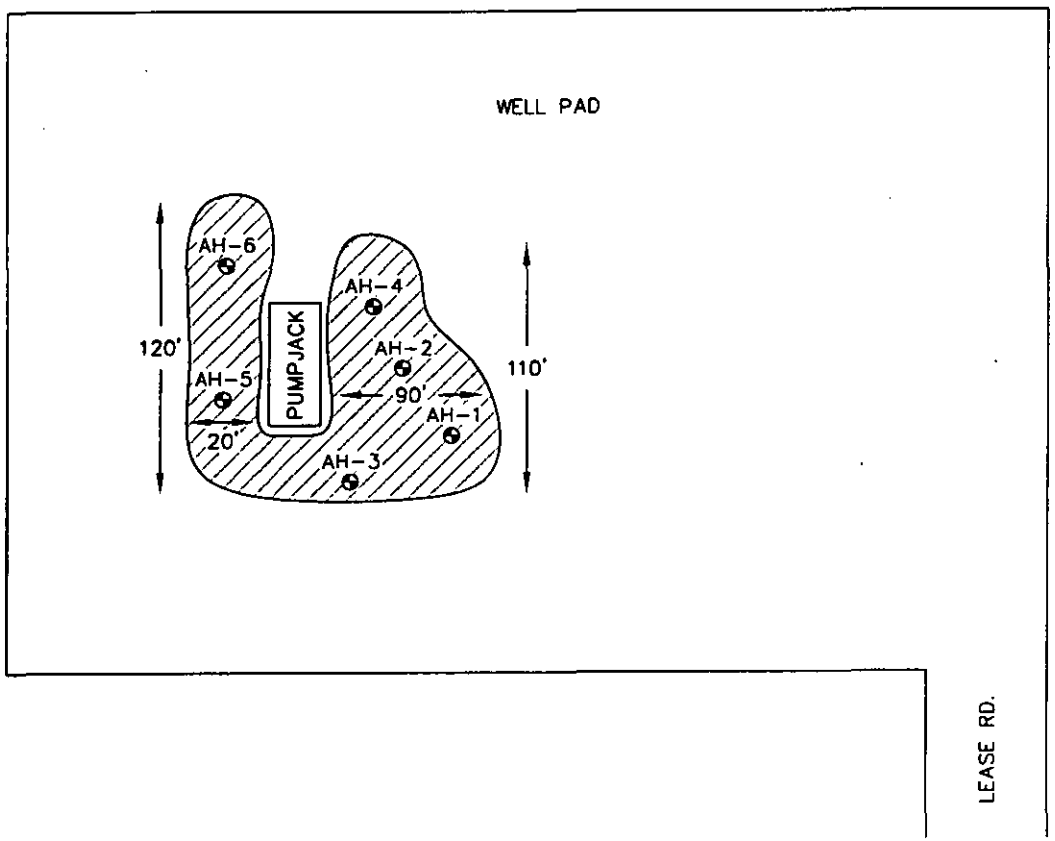


FIGURE NO. 2
EDDY COUNTY, NEW MEXICO
ST. MARY LAND
& EXOPLORATION COMPANY
TOPOGRAPHIC MAP



SPILL AREA
AUGER HOLE

NOT TO SCALE

FIGURE NO. 3

EDDY COUNTY, NEW MEXICO

ST. MARY LAND
& EXPLORATION COMPANY

PDU #514

DATE: 3/27/09
DWN. BY: JJ
FILE: H:\ST. MARY\84001137 PDU #514

TETRA TECH, INC.
MIDLAND, TEXAS

TABLE

Table 1
St. Mary Land & Exploration
PDU #514
Eddy 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	3/4/2009	0-1 BEB (1.0)	X		<50.0	2.76	2.76	-	-	-	-	<200
	3/4/2009	1-1.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
	3/4/2009	2-2.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
AH-2	3/4/2009	0-1 BEB (0.5)	X		<50.0	2.73	2.73	-	-	-	-	<200
	3/4/2009	1-1.5 BEB (0.5)	X		-	-	-	-	-	-	-	<200
	3/4/2009	2-2.5 BEB (0.5)	X		-	-	-	-	-	-	-	<200
AH-3	3/4/2009	0-1 BEB (1.0)	X		<50.0	2.91	2.91	<0.0100	<0.0100	<0.0100	<0.0100	<200
	3/4/2009	1-1.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
	3/4/2009	2-2.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
AH-4	3/4/2009	0-1 BEB (1.0)	X		<50.0	2.13	2.13	-	-	-	-	<200
	3/4/2009	1-1.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
	3/4/2009	2-2.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
AH-5	3/4/2009	0-1 BEB (1.0)	X		<50.0	2.84	2.84	<0.0100	<0.0100	<0.0100	<0.0100	<200
	3/4/2009	1-1.5 BEB (1.0)	X		-	-	-	-	-	-	-	<200
	3/4/2009	1.5-2 BEB (1.0)	X		-	-	-	-	-	-	-	<200
AH-6	3/4/2009	0-1 BEB (0.3)	X		<50.0	2.96	2.96	<0.0100	<0.0100	<0.0100	<0.0100	<200
	3/4/2009	1-1.5 BEB (0.3)	X		-	-	-	-	-	-	-	<200
	3/4/2009	2-2.5 BEB (0.3)	X		-	-	-	-	-	-	-	<200

(-) Not Analyzed

APPENDIX A
NMOCD FORM C-141

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 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 Parkway Delaware Unit #514	Facility Type Well

Surface Owner BLM	Mineral Owner BLM	Lease No. NMNM88491X

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	35	19S	29E	1210'	South	2065'	East	Eddy

Latitude _____ Longitude _____

NATURE OF RELEASE

Type of Release Prod. oil/wtr	Volume of Release 15BO/15wtr Volume Recovered 6BO/6wtr
Source of Release Stuffing Box	Date and Hour of Occurrence 2/19/09 Date and Hour of Discovery 2/19/09 6P
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? Mike Bratcher w/NMOCD & Jim Amos w/BLM
By Whom? Bill Hearne	Date and Hour 2/20/09 @ 10:27AM
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Cause: Hot Oiler, after hot watering flowline, improperly adjusted Baird backpressure valve causing tubing to over pressure and blow stuffing box packing out.
Remedial Action: Re-packed stuffing box.

Describe Area Affected and Cleanup Action Taken.*

Spill Area: 141' x 60' = 8460 sq. ft.
Est. 15 oil/ 15 water spilled, all on location. PU 6 oil/ 6 water = Net Loss 9 oil/ 9 water.
Steam cleaned pumping unit, PU standing fluid on location, and dug out contaminated caliche to be hauled off to CRI for disposal. Haul in new caliche to repair location.

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	OIL CONSERVATION DIVISION
Printed Name: Donna Huddleston	Approved by District Supervisor:
Title: Production Tech	Approval Date: / Expiration Date:
E-mail Address: dhuddleston@stmaryland.com	Conditions of Approval: / Attached ☐
Date: 02/23/2009 Phone: (432)688-1789	

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

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 79705*	Telephone No. *432-688-1789*
Facility Name *Parkway Delaware Unit #514*	Facility Type *Well*

Surface Owner *BLM*	Mineral Owner *BLM*	Lease No. *NMNM88491X*

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	35	19S	29E	1210'	South	2065'	East	Eddy

Latitude_____ Longitude_____

NATURE OF RELEASE

Type of Release *Produced Oil/Water*	Volume of Release *15 BO/15 BW*	Volume Recovered *6 BO/6 BW*
Source of Release *Stuffing Box*	Date and Hour of Occurrence *12/19/09 6:00 PM*	Date and Hour of Discovery *12/19/09 6:00 PM*
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? *Mike Bratcher w/NMOCD & Jim Amos w/BLM*	
By Whom? *Bill Hearne*	Date and Hour *2/20/2009 10:27 AM*	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*
Cause: Hot Oiler, after watering flowline, improperly adjusted Baird backpressure valve causing tubing to over pressure and blow stuffing box packing out.
Remedial Action: Re-packed stuffing box.

Describe Area Affected and Cleanup Action Taken.*
Spill Area: 141' x 60' = 8460 sq. ft.
Estimate 15 bbls oil / 15 bbls water spilled, all on location. Picked up 6 bbls oil / 6 bbls water = Net Loss 9 bbls oil / 9 bbls water.
Steam cleaned pumping unit. Picked up standing fluid on location, and dug out contaminated caliche to be hauled off to CRI for disposal.
Haul in new caliche to repair location.

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	OIL CONSERVATION DIVISION	
Printed Name: *Donna Huddleston*	Approved by District Supervisor:	
Title: *Production Tech*	Approval Date:	Expiration Date:
E-mail Address: *dhuddleston@stmaryland.com*	Conditions of Approval:	Attached ☐
Date: *3/27/2009* Phone: *432-688-1789*		

* Attach Additional Sheets If Necessary

APPENDIX B
GROUNDWATER DATA

Water Well Data
Average Depth to Groundwater (ft)
St Mary Land & Exploration Co. - Parkway Delaware Unit #514

18 South 28 East

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

18 South 29 East

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

18 South 30 East

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

19 South 28 East

6	5	4	3	2	1
7	8	9 **265**	10	11	12
18 **91**	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

19 South 29 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13 **123** **101**
19	20 **62.9**	21	22	23	24
30	29	28	27	26	25
31	32	33	34 **60**	35 **110**	36 **115**

19 South 30 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30 **90**	29	28	27	26	25
31 **115**	32	33	34	35	36

20 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28 **30**	27 **35**	26	25
31 **115**	32	33 **25** **29**	34	35	36 **19**

20 South 29 East

6	5	4	3 **91**	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20 **62**	21	22	23	24
30 **52**	29	28	27	26	25
31	32	33	34	35	36

20 South 30 East

6	5 **3.5**	4	3 **6**	2	1
7	8	9	10	11	12
18	17	16 **29**	15	14	13
19	20 **29**	21 **150**	22	23	24
30	29	28	27	26	25
31	32 **170**	33 **191**	34	35	36

88 New Mexico State Engineers Well Reports

105 USGS Well Reports

90 Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)

Geology and Groundwater Resources of Eddy County, NM (Report 3)

34 NMOCD - Groundwater Data

New Mexico Office of the State Engineer
POD Reports and Downloads

Township: 19S Range: 29E Sections:

NAD27 X: Y: Zone: Search Radius:

County: Basin: Number: Suffix:

Owner Name: (First) (Last) ○ Non-Domestic ○ Domestic ◉ All

POD / Surface Data Report | Avg Depth to Water Report | Water Column Report

Clear Form | iWATERS Menu | Help

AVERAGE DEPTH OF WATER REPORT 04/28/2009

							(Depth Water in Feet)		
Bsn	Tws	Rng	Sec	Zone	X	Y	Wells	Min	Max	Avg
CP	19S	29E	34				1	60	60	60
CP	19S	29E	35				1	110	110	110
CP	19S	29E	36				1	115	115	115

Record Count: 3

APPENDIX C
SUMMARY REPORT
March 18, 2009

Summary Report

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

Report Date: March 18, 2009

Work Order: 9030518

Project Location: Eddy Co., NM
Project Name: St. Mary/PDU #514
Project Number: 114-6400132

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
189101	AH-1 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189102	AH-1 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189103	AH-1 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189104	AH-2 0-1' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189105	AH-2 1'-1.5' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189106	AH-2 2'-2.5' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189107	AH-3 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189108	AH-3 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189109	AH-3 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189110	AH-4 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189111	AH-4 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189112	AH-4 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189113	AH-5 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189114	AH-5 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189115	AH-5 1.5'-2' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189116	AH-6 0-1' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05
189117	AH-6 1'-1.5' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05
189118	AH-6 2'-2.5' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05

	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)
189101 - AH-1 0-1' (1' BEB)					<50.0	**2.76**
189104 - AH-2 0-1' (.5' BEB)					<50.0	**2.73**
189107 - AH-3 0-1' (1' BEB)	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**2.91**
189110 - AH-4 0-1' (1' BEB)					<50.0	**2.13**
189113 - AH-5 0-1' (1' BEB)	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**2.84**
189116 - AH-6 0-1' (.3' BEB)	<0.0100	<0.0100	<0.0100	<0.0100	<50.0	**2.96**

Sample: 189101 - AH-1 0-1' (1' BEB)

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

Sample: 189102 - AH-1 1'-1.5' (1' BEB)

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

Sample: 189103 - AH-1 2'-2.5' (1' BEB)

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

Sample: 189104 - AH-2 0-1' (.5' BEB)

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

Sample: 189105 - AH-2 1'-1.5' (.5' BEB)

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

Sample: 189106 - AH-2 2'-2.5' (.5' BEB)

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

Sample: 189107 - AH-3 0-1' (1' BEB)

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

Sample: 189108 - AH-3 1'-1.5' (1' BEB)

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

Sample: 189109 - AH-3 2'-2.5' (1' BEB)

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

Sample: 189110 - AH-4 0-1' (1' BEB)

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

Sample: 189111 - AH-4 1'-1.5' (1' BEB)

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

Sample: 189112 - AH-4 2'-2.5' (1' BEB)

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

Sample: 189113 - AH-5 0-1' (1' BEB)

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

Sample: 189114 - AH-5 1'-1.5' (1' BEB)

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

Sample: 189115 - AH-5 1.5'-2' (1' BEB)

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

Sample: 189116 - AH-6 0-1' (.3' BEB)

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

Sample: 189117 - AH-6 1'-1.5' (.3' BEB)

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

Sample: 189118 - AH-6 2'-2.5' (.3' BEB)

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: March 11, 2009

Work Order: 9030518

Project Location: Eddy Co., NM
Project Name: St. Mary/PDU #514
Project Number: 114-6400132

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
189101	AH-1 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189102	AH-1 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189103	AH-1 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189104	AH-2 0-1' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189105	AH-2 1'-1.5' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189106	AH-2 2'-2.5' (.5' BEB)	soil	2009-03-04	00:00	2009-03-05
189107	AH-3 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189108	AH-3 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189109	AH-3 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189110	AH-4 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
189111	AH-4 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189112	AH-4 2'-2.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189113	AH-5 0-1' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189114	AH-5 1'-1.5' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189115	AH-5 1.5'-2' (1' BEB)	soil	2009-03-04	00:00	2009-03-05
189116	AH-6 0-1' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05
189117	AH-6 1'-1.5' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05
189118	AH-6 2'-2.5' (.3' BEB)	soil	2009-03-04	00:00	2009-03-05

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.

Dr. Blair Leftwich, Director

Standard Flags

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

Case Narrative

Samples for project St. Mary/PDU #514 were received by TraceAnalysis, Inc. on 2009-03-05 and assigned to work order 9030518. Samples for work order 9030518 were received intact at a temperature of 5.3 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	49051	2009-03-09 at 09:50	57420	2009-03-09 at 12:51
Chloride (Titration)	SM 4500-Cl B	49052	2009-03-09 at 09:51	57421	2009-03-09 at 12:52
Chloride (Titration)	SM 4500-Cl B	49053	2009-03-09 at 09:51	57423	2009-03-09 at 12:53
TPH DRO	Mod. 8015B	49063	2009-03-06 at 13:00	57415	2009-03-09 at 10:00
TPH GRO	S 8015B	49012	2009-03-05 at 15:09	57365	2009-03-05 at 15:09

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 9030518 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: 189101 - AH-1 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57420	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49051	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189101 - AH-1 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		244	mg/Kg	1	100	244	10 - 250.4

Sample: 189101 - AH-1 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**2.76**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.927	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.642	mg/Kg	1	1.00	64	52 - 117

Sample: 189102 - AH-1 1'-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57420	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49051	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189103 - AH-1 2'-2.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57420	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49051	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189104 - AH-2 0-1' (.5' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57420	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49051	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189104 - AH-2 0-1' (.5' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		83.2	mg/Kg	1	100	83	10 - 250.4

Sample: 189104 - AH-2 0-1' (.5' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		2.73	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.928	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.675	mg/Kg	1	1.00	68	52 - 117

Sample: 189105 - AH-2 1'-1.5' (.5' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189106 - AH-2 2'-2.5' (.5' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189107 - AH-3 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189107 - AH-3 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		93.2	mg/Kg	1	100	93	10 - 250.4

Sample: 189107 - AH-3 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	Result	RL Units	Dilution	RL
GRO		**2.91**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.931	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.660	mg/Kg	1	1.00	66	52 - 117

Sample: 189108 - AH-3 1'-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189109 - AH-3 2'-2.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189110 - AH-4 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189110 - AH-4 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		240	mg/Kg	1	100	240	10 - 250.4

Sample: 189110 - AH-4 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**2.13**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.932	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.717	mg/Kg	1	1.00	72	52 - 117

Sample: 189111 - AH-4 1'-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189112 - AH-4 2'-2.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189113 - AH-5 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189113 - AH-5 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		162	mg/Kg	1	100	162	10 - 250.4

Sample: 189113 - AH-5 0-1' (1' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	Result	RL	Units	Dilution	RL
GRO		2.84		mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.934	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.677	mg/Kg	1	1.00	68	52 - 117

Sample: 189114 - AH-5 1'-1.5' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189115 - AH-5 1.5'-2' (1' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57423	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49053	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189116 - AH-6 0-1' (.3' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57423	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49053	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189116 - AH-6 0-1' (.3' BEB)

Laboratory:	Midland				
Analysis:	TPH DRO	Analytical Method:	Mod. 8015B	Prep Method:	N/A
QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	Sample Preparation:	2009-03-06	Prepared By:	LD

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		66.7	mg/Kg	1	100	67	10 - 250.4

Sample: 189116 - AH-6 0-1' (.3' BEB)

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015B	Prep Method:	S 5035
QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	Sample Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	RL Result	Units	Dilution	RL
GRO		**2.96**	mg/Kg	1	1.00

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.930	mg/Kg	1	1.00	93	68.5 - 119.4
4-Bromofluorobenzene (4-BFB)		0.709	mg/Kg	1	1.00	71	52 - 117

Sample: 189117 - AH-6 1'-1.5' (.3' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57423	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49053	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Sample: 189118 - AH-6 2'-2.5' (.3' BEB)

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	57423	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49053	Sample Preparation:	2009-03-09	Prepared By:	AR

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

Method Blank (1) QC Batch: 57365

QC Batch:	57365	Date Analyzed:	2009-03-05	Analyzed By:	ME
Prep Batch:	49012	QC Preparation:	2009-03-05	Prepared By:	ME

Parameter	Flag	MDL Result	Units	RL
GRO		<0.482	mg/Kg	1

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		0.921	mg/Kg	1	1.00	92	75.8 - 98.5
4-Bromofluorobenzene (4-BFB)		0.740	mg/Kg	1	1.00	74	56.5 - 109.5

Method Blank (1) QC Batch: 57415

QC Batch:	57415	Date Analyzed:	2009-03-09	Analyzed By:	LD
Prep Batch:	49063	QC Preparation:	2009-03-06	Prepared By:	LD

Parameter	Flag	MDL Result	Units	RL
DRO		<12.0	mg/Kg	50

Surrogate	Flag	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Triacontane		66.6	mg/Kg	1	100	67	30.9 - 146.4

Method Blank (1) QC Batch: 57420

QC Batch:	57420	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49051	QC Preparation:	2009-03-09	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Method Blank (1) QC Batch: 57421

QC Batch:	57421	Date Analyzed:	2009-03-09	Analyzed By:	AR
Prep Batch:	49052	QC Preparation:	2009-03-09	Prepared By:	AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Method Blank (1) QC Batch: 57423

QC Batch: 57423 Date Analyzed: 2009-03-09 Analyzed By: AR
Prep Batch: 49053 QC Preparation: 2009-03-09 Prepared By: AR

Parameter	Flag	MDL Result	Units	RL
Chloride		<2.01	mg/Kg	4

Laboratory Control Spike (LCS-1)

QC Batch: 57365 Date Analyzed: 2009-03-05 Analyzed By: ME
Prep Batch: 49012 QC Preparation: 2009-03-05 Prepared By: ME

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	9.07	mg/Kg	1	10.0	<0.482	91	60.5 - 100.1

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	8.85	mg/Kg	1	10.0	<0.482	88	60.5 - 100.1	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)	0.982	0.969	mg/Kg	1	1.00	98	97	78.8 - 104.7
4-Bromofluorobenzene (4-BFB)	0.791	0.788	mg/Kg	1	1.00	79	79	66.1 - 107.3

Laboratory Control Spike (LCS-1)

QC Batch: 57415 Date Analyzed: 2009-03-09 Analyzed By: LD
Prep Batch: 49063 QC Preparation: 2009-03-06 Prepared By: LD

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	281	mg/Kg	1	250	<12.0	112	27.8 - 152.1

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	243	mg/Kg	1	250	<12.0	97	27.8 - 152.1	14	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	75.3	66.0	mg/Kg	1	100	75	66	38 - 130.4

Laboratory Control Spike (LCS-1)

QC Batch: 57420 Date Analyzed: 2009-03-09 Analyzed By: AR
Prep Batch: 49051 QC Preparation: 2009-03-09 Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	102	mg/Kg	1	100	<2.01	102	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	101	mg/Kg	1	100	<2.01	101	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: 57421 Date Analyzed: 2009-03-09 Analyzed By: AR
Prep Batch: 49052 QC Preparation: 2009-03-09 Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	98.5	mg/Kg	1	100	<2.01	98	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	<2.01	100	85 - 115	2	20

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

Laboratory Control Spike (LCS-1)

QC Batch: 57423 Date Analyzed: 2009-03-09 Analyzed By: AR
Prep Batch: 49053 QC Preparation: 2009-03-09 Prepared By: AR

Param	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	99.2	mg/Kg	1	100	<2.01	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	99.9	mg/Kg	1	100	<2.01	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: 189005

QC Batch: 57365 | Date Analyzed: 2009-03-05 | Analyzed By: ME
Prep Batch: 49012 | QC Preparation: 2009-03-05 | Prepared By: ME

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO	19.3	mg/Kg	1	10.0	2.9554	163	12.8 - 175.2

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	17.0	mg/Kg	1	10.0	2.9554	140	12.8 - 175.2	13	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)	0.980	0.998	mg/Kg	1	1	98	100	60.8 - 132.1
4-Bromofluorobenzene (4-BFB)	0.660	0.663	mg/Kg	1	1	66	66	31.3 - 161.7

Matrix Spike (MS-1) Spiked Sample: 189005

QC Batch: 57415 | Date Analyzed: 2009-03-09 | Analyzed By: LD
Prep Batch: 49063 | QC Preparation: 2009-03-06 | Prepared By: LD

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO	326	mg/Kg	1	250	102	90	18 - 179.5

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	320	mg/Kg	1	250	102	87	18 - 179.5	2	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	106	mg/Kg	1	100	101	106	34.1 - 158

Matrix Spike (MS-1) Spiked Sample: 189104

QC Batch: 57420 | Date Analyzed: 2009-03-09 | Analyzed By: AR
Prep Batch: 49051 | QC Preparation: 2009-03-09 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	4950	mg/Kg	50	5000	104	97	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	5080	mg/Kg	50	5000	104	100	85 - 115	3	20

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

Matrix Spike (MS-1) Spiked Sample: 189114

QC Batch: 57421 | Date Analyzed: 2009-03-09 | Analyzed By: AR
Prep Batch: 49052 | QC Preparation: 2009-03-09 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	5100	mg/Kg	50	5000	<100	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	5160	mg/Kg	50	5000	<100	103	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: 189118

QC Batch: 57423 | Date Analyzed: 2009-03-09 | Analyzed By: AR
Prep Batch: 49053 | QC Preparation: 2009-03-09 | Prepared By: AR

Param	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride	4990	mg/Kg	50	5000	126	97	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	5050	mg/Kg	50	5000	126	98	85 - 115	1	20

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

Standard (ICV-1)

QC Batch: 57365 Date Analyzed: 2009-03-05 Analyzed By: ME

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.998	100	85 - 115	2009-03-05

Standard (CCV-1)

QC Batch: 57365 Date Analyzed: 2009-03-05 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.920	92	85 - 115	2009-03-05

Standard (CCV-2)

QC Batch: 57365 Date Analyzed: 2009-03-05 Analyzed By: ME

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		mg/Kg	1.00	0.882	88	85 - 115	2009-03-05

Standard (CCV-2)

QC Batch: 57415 Date Analyzed: 2009-03-09 Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	248	99	85 - 115	2009-03-09

Standard (CCV-3)

QC Batch: 57415 Date Analyzed: 2009-03-09 Analyzed By: LD

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		mg/Kg	250	238	95	85 - 115	2009-03-09

Standard (ICV-1)

QC Batch: 57420 Date Analyzed: 2009-03-09 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.1	99	85 - 115	2009-03-09

Standard (CCV-1)

QC Batch: 57420 Date Analyzed: 2009-03-09 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	101	101	85 - 115	2009-03-09

Standard (ICV-1)

QC Batch: 57421 Date Analyzed: 2009-03-09 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	99.8	100	85 - 115	2009-03-09

Standard (CCV-1)

QC Batch: 57421 Date Analyzed: 2009-03-09 Analyzed By: AR

Param	Flag	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	100	100	85 - 115	2009-03-09

Standard (ICV-1)

QC Batch: 57423 Date Analyzed: 2009-03-09 Analyzed By: AR

Param	Flag	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		mg/Kg	100	98.2	98	85 - 115	2009-03-09

Standard (CCV-1)

QC Batch: 57423 Date Analyzed: 2009-03-09 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	2009-03-09

90WJ18

Analysis Request of Chain of Custody Record

PAGE: 1 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.: 114-6406132
PROJECT NAME: St Marys / PDU #514 Eddy Co, NM

LAB I.D. NUMBER	DATE 2009	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	HCL	HNO3	ICE	NONE
189101	3/4		S		X	AH-1 0-1' (1' BEB)	1				X	
102	3/4		S		X	AH-1 1'-1.5' (1' BEB)						
103	3/4		S		X	AH-1 2'-2.5' (1' BEB)						
104	3/4		S		X	AH-2 0-1' (.5' BEB)						
105	3/4		S		X	AH-2 1'-1.5' (.5' BEB)						
106	3/4		S		X	AH-2 2'-2.5' (.5' BEB)						
107	3/4		S		X	AH-3 0-1' (1' BEB)						
108	3/4		S		X	AH-3 1'-1.5' (1' BEB)						
109	3/4		S		X	AH-3 2'-2.5' (1' BEB)						
110						AH-4 0-1' (1' BEB						

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D.	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
189101		X											X				
102													X				
103													X				
104		X											X				
105													X				
106													X				
107		X											X				
108													X				
109													X				
110		X											X				

RELINQUISHED BY: (Signature) [signature] Date: 3/5/09 Time: 11:05
RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) [signature] Date: Time:
RECEIVED BY: (Signature) Date: Time:
RELINQUISHED BY: (Signature) Date: Time:
RECEIVED BY: (Signature) Date: Time:

RECEIVING LABORATORY: Tracy
ADDRESS:
CITY: Midland STATE: TX ZIP:
CONTACT: PHONE:
RECEIVED BY: (Signature) [signature]
DATE: 3.5.09 TIME: 11:05

SAMPLED BY: (Print & Initial) JT/EG Date: 3/4/09 Time:
SAMPLE SHIPPED BY: (Circle) FEDEX BUS AIRBILL #: HAND DELIVERED (circled) UPS OTHER:
TETRA TECH CONTACT PERSON: Ike Tavarez
Results by:
RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.3°C intact
REMARKS: If total TPH exceeds 1,000 (ST) mg/kg run deeper horizons. 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.

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.: 114-410132

PROJECT NAME: St Marys / PDU #514 Eddy 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. 8270/626	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
189111	3/4		S		X	AH-4 1'-1.5' (1' BEB)	1				X													X				
112			1			AH-4 2'-2.5' (1' BEB)																						
113						AH-5 0-1' (1' BEB)								X														
114						AH-5 1'-1.5' (1' BEB)																						
115						AH-5 1.5'-2' (1' BEB)																						
116						AH-6 0-1' (.3' BEB)								X														
117						AH-6 1'-1.5' (.3' BEB)																						
118						AH-6 2'-2.5' (.3' BEB)																						

RELINQUISHED BY: (Signature) Date: 3/5/09 Time: 11:05

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

SAMPLED BY: (Print & Initial) JT JRG Date: 3/4/09 Time:

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

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: TX ZIP:

CONTACT: PHONE:

RECEIVED BY: (Signature)

DATE: 3-5-09 TIME: 11:05

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: 5.3°C on ice

REMARKS: If total TPH 1st exceeds 1st 10,000 / 1,000 mg/kg, run deeper horizons 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.