

HOBBS OCD JUN 2 8 2013

May 10, 2013

RECEIVED

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

approved Environmental Specialist NMOCD-DIST 1

122114

Re: Assessment Work Plan for the NMR Energy, LLC., Barnhill and Post Tank Battery, Unit L, Section 1, Township 14 South, Range 37 East, Lea County, New Mexico.

Mr. Leking:

Tetra Tech, Inc. (Tetra Tech) was contacted by NMR Energy, LLC., (NMR) to assess a reportedly historical impact at the Barnhill and Post Tank Battery, Unit L, Section 1, Township 14 South, Range 37 East, Lea County, New Mexico (Site). The site coordinates are N 33.13336°, W 103.16141°. The site location is shown on Figures 1 and 2.

Background

Historical Release

The NMOCD requested NMR Energy to submit a State of New Mexico C-141 Initial Report for a reportedly historical spill that occurred under the previous operator of the facility.

Recent Release

After the historical spill was assessed, but before it could be remediated, a second recent release occurred. According to the C-141, the second spill released 3 barrels of crude oil and produced water, and then the next day a rainfall event occurred, which carried the fluids throughout the tank battery, and the caused the spill to cover the area around the storage tanks. All of the fluid was contained inside the facility's firewalls. Due to the rainfall event, 22 barrels of fluid (3 barrels of crude oil and produced water,



and 19 barrels of rainwater) were recovered. The C-141 form is enclosed in Appendix A.

Groundwater

The New Mexico State Engineer's Office Well Reports showed one well in Section 1, with a reported groundwater depth of 50' below surface. In additional, wells were also noted in Section 2, 11 and 14, near the site, with depths to groundwater ranging from 46' to 100' below surface. The USGS data also showed groundwater depths ranging from 85' to 120' below surface. According to the NMOCD groundwater map and data, the depth to groundwater in this area is approximately 80' below surface. A private water well used by the landowner is located is located in the northwest corner of Section 12, approximately 0.5 miles south of the tank battery was measured by Tetra Tech personnel and measured 86' below ground surface. The groundwater data is shown in Appendix B.

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX. Based upon the depth to groundwater, the proposed RRAL for TPH is 1,000 mg/kg.

Assessment

Historical Release

On July 17, 2012, representatives from Tetra Tech and Helms Oil and Gas met with Mr. Geoffrey Leking with the NMOCD onsite to inspect and confirm the sampling locations at the facility. Mr. Leking selected two (2) locations to assess the subsurface soils from historical impact at the tank battery. On October 9, 2012, Tetra Tech installed two (2) backhoe trenches (T-1 and T-2) inside the berm to evaluate and vertically define extents of subsurface impact. Selected samples were analyzed for TPH analysis by



EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. The sampling results are summarized in Table 1. The trench locations are shown on Figure 3. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C.

Referring to Table 1, T-1 samples showed a TPH concentration above the RRAL in the 1.0' sample of 3,161 mg/Kg, but the concentrations decrease to below 50 mg/Kg in the 2' sample. Trench 2 (T-2) showed no hydrocarbon impact to the area.

Elevated chloride concentrations were detected in T-1 from surface to a depth of 5.0' below surface. The concentrations were 2,230 mg/Kg in the 1.0' sample, and spiked to 2,830 mg/Kg in the 4.0' sample, then significantly declined to 1,010 mg/kg in the 5.0', bottom hole sample. Deeper samples could not be collected due to the dense caliche formation. The chloride impact was not vertically defined.

Elevated chloride concentrations were also detected in T-2. The concentrations were 76.7 mg/Kg in the 1.0' sample, and significantly increased to 744 mg/Kg in the 2.0 sample, and 749 mg/Kg in the 4.0 sample before declining to 389 mg/Kg in the 6.0' sample. Deeper samples could not be collected due to the dense caliche formation. The chloride impact in the area of T-2 was vertically defined.

Work Plan

On November 30, 2012, a second release occurred at the site and will require an assessment, as requested by the NMOCD. The spill footprint is shown on Figure 3. Tetra Tech personnel will oversee the installation of four (4) boreholes in the release area to assess and define the extent of the contamination. As shown on Figure 3, the proposed borehole (BH-4) will be installed to assess the recent release as well as the historical release (T-1) in the area.

A drilling rig will be utilized, and all down hole equipment (i.e., drill rods, drill bits, etc.) will be thoroughly decontaminated between each borehole with a high-pressure hot water wash and rinse. The proposed boreholes are shown on Figure 3.

The samples selected for analysis will be determined from field observation and data. All samples will be collected and preserved in laboratory prepared sample containers with standard QA/QC procedures. All samples will be shipped under proper chain-of-custody control and analyzed within the standard holding times. The soil samples will be analyzed for Total



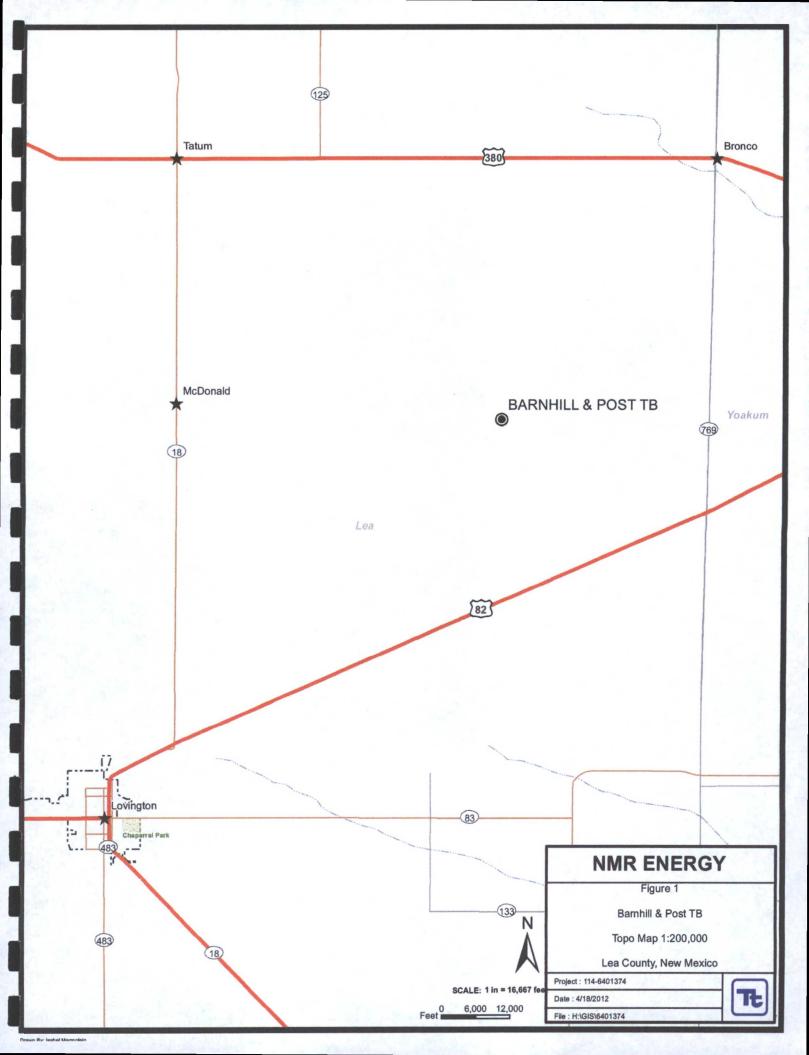
Petroleum Hydrocarbon (TPH) by method 8015 DRO/GRO, Benzene, Toluene, Ethyl benzene, and Xylene (BTEX) by method EPA Method 8021B and chloride by method EPA method 300.

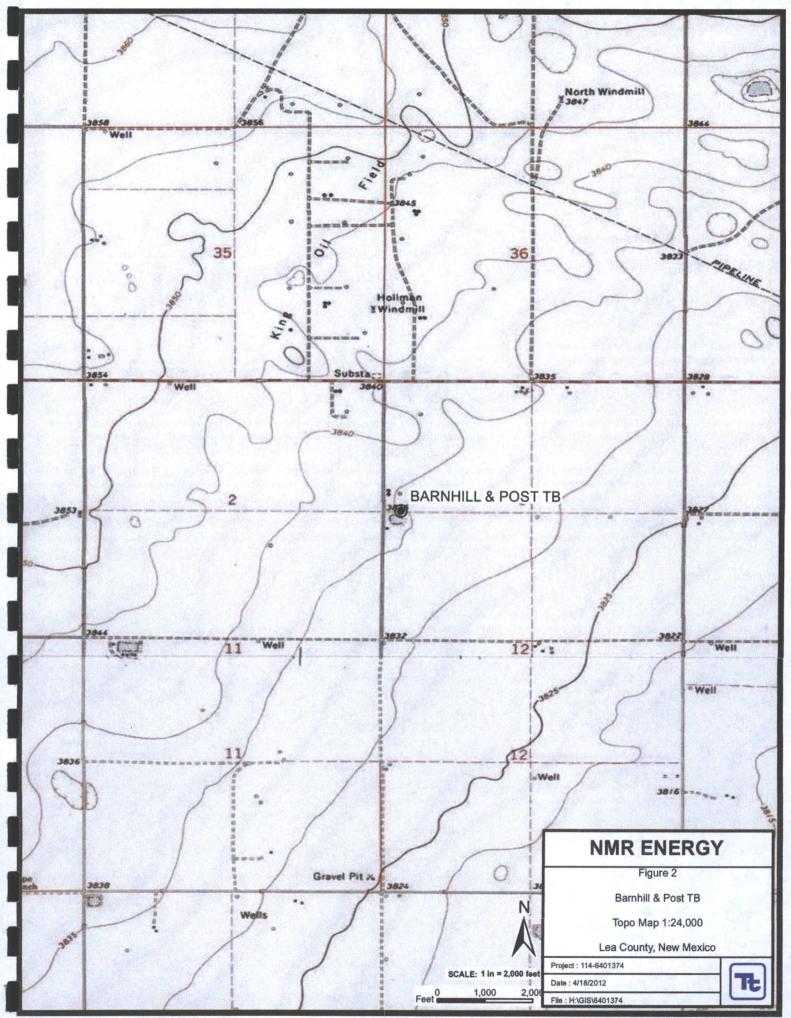
Once the analytical data has been received and review, a remediation work plan will be prepared for both spill areas and submitted to the NMOCD for approval. If you have any questions or comments concerning the proposed work plan, please call me at (432) 682-4559.

Respectfully submitted, TETRA TECH

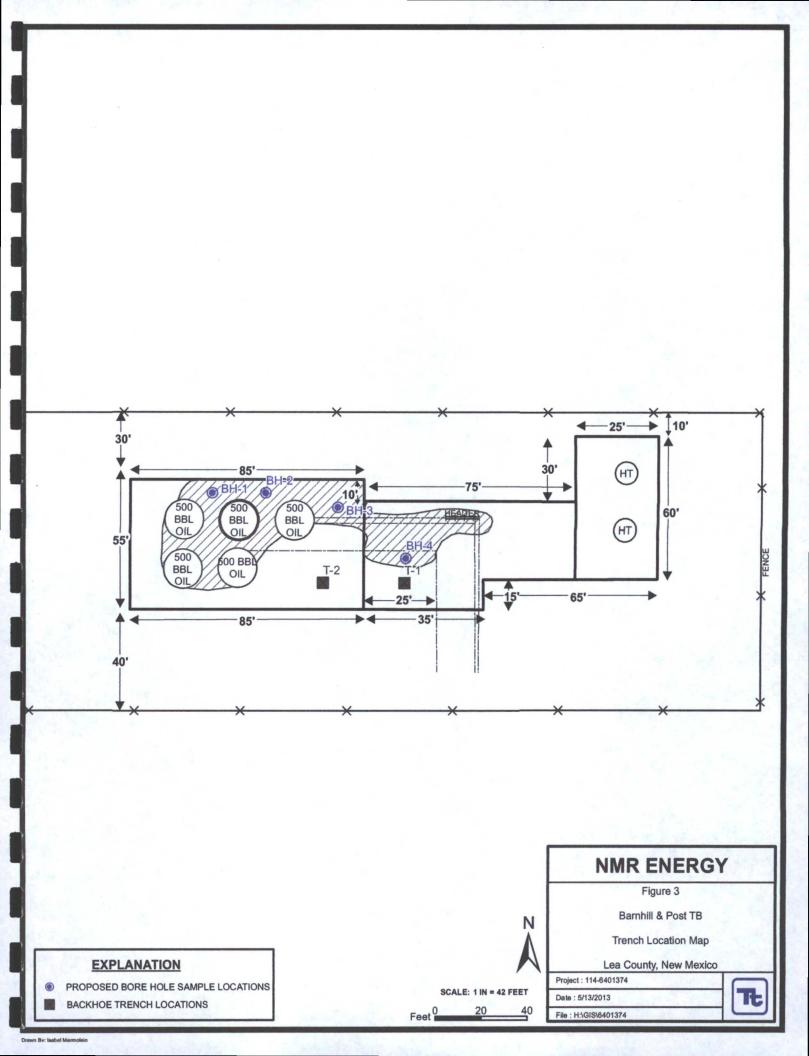
James F. Kennedy Project Manager

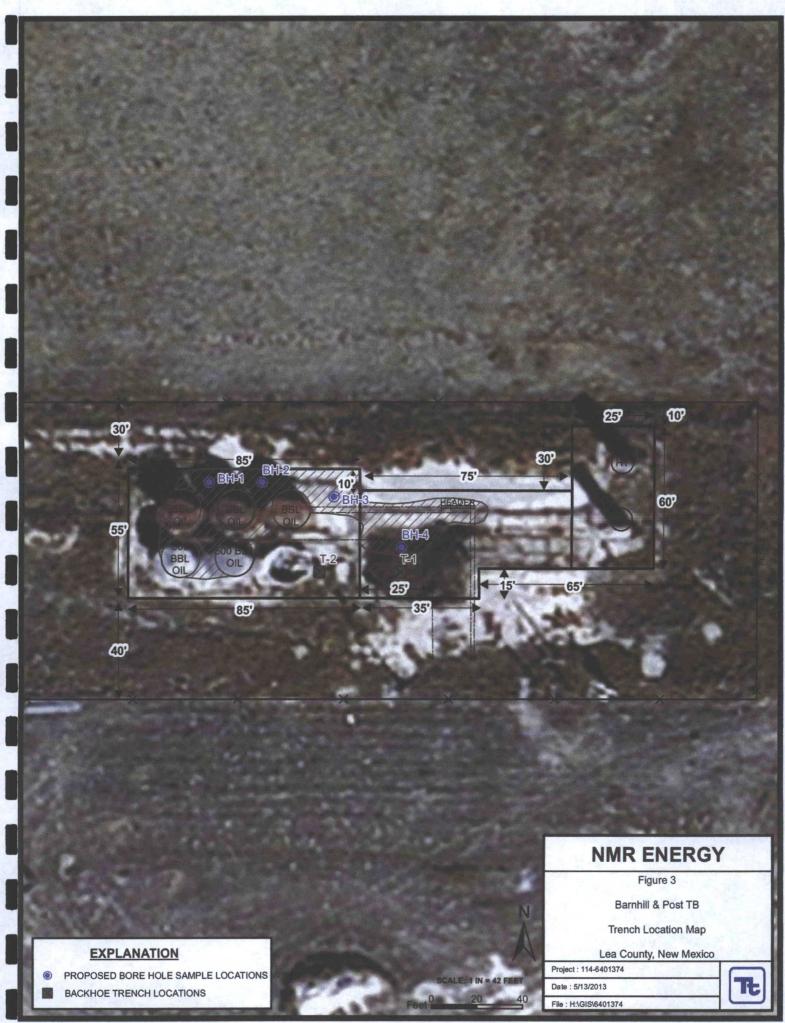
cc: Hollie Lamb – Helm Daniel Baker - Tumbleweed





Drewn By: Isabel Mannolejc





Drawn By: Isabel Marmolejo

Table 1 NMR Energy LLC Barnhill and Post Tank Battery Lea County, New Mexico

Sample	Sample	Sample	Soil	Soil Status	TF	TPH (mg/kg)	(g)	Benzene	Toluene	Ethlybenzene	Xylene	Total	Chloride
	Date	Depth (ft)	In-Situ	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
H	10/9/2012	0-1	×		1.03	3,160	3,161	<0.0200	<0.0200	<0.0200	<0.0200		2,230
	н	2	×		19.9	<50.0	19.9						2,510
	=	4	×		1	ī	1			-			2,830
	=	5	×		•	•	1					•	1,010
T-2	10/9/2012	0-1	×		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	76.7
	=	2	×		1	1.1			104-	-	14 - 14 A		744
	=	4	×			-		-		1			749
	=	9	×			1			1.1.1.1				389

(--) Not Analyzed Exceeding RRAL PHOTOGRAPHIC DOCUMENTATION NMR Energy, LLC Post and Barnhill Tank Battery Lea County, New Mexico



Photo 1. View of T-1 location.



Photo 2. View of T-2 location.

PHOTOGRAPHIC DOCUMENTATION NMR Energy, LLC Post and Barnhill Tank Battery Lea County, New Mexico



Photo 3. View of T-1 being installed.



Photo 4. View of T-2.

District I 1625 N. French Dr., Hobbs, NM 88240 District II 811 S. First St., Artesia, NM 88210 District III 1000 Rio Brazos Road, Aztec, NM 87410 District IV 1220 S. St. Francis Dr., Santa Fe, NM 87505

Address

Unit Letter

By Whom?

smooth surface.

Signature:

Date:

D

Facility Name

Surface Owner

1

State of New Mexico Energy Minerals and Natural Resources

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

HOBBS OCD

Form C-141 Revised August 8, 2011

APR 1 8 2013 Submit 1 Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED **Release Notification and Corrective Action OPERATOR** Initial Report Final Report Daniel Baker Name of Company NMR Energy LLC Contact 800 Bering Drive, STE 250 Houston, TX 77057 Telephone No. (432) 559-7520 Facility Type Post and Barnhill Battery Battery Mineral Owner Kirby Schenck Trust/Tierra Oil Bos Dairy (Issak) API No. 30-025-28597 28576 Comp. (FOST进3) LOCATION OF RELEASE North/South Line East/West Line Feet from the Feet from the Section Township Range County 14-S 37-E 330 North 330' West Lea Longitude Latitude NATURE OF RELEASE Type of Release Oil and Produced Water Volume of Release 3 bbls Volume Recovered 3 bbls Source of Release Hatch on oil tank leaked Date and Hour of Occurrence Date and Hour of Discovery 11/30/2012 12/1/2012 Was Immediate Notice Given? If YES, To Whom? 🛛 No 🗌 Not Required 1 Yes Date and Hour Was a Watercourse Reached? If YES, Volume Impacting the Watercourse. Yes No If a Watercourse was Impacted, Describe Fully.* Describe Cause of Problem and Remedial Action Taken.* Oil tank #211 had a hatch leak. Estimated 3 bbls of oil and produced water released on ground. The following day, it rained. A vacuum truck was called out to assist in picking up fluid on surface and rain water. Picked up 3 bbls of reportable spill. Transferred 9" (22 bbls) to tank #212. Pulled hatch and jetted tank clean. Checked tank for leaks. Gasket around hatch was determined to be bad. Replaced gasket and hatch. Loaded tank with 130 bbls of FW. Test tank for 4 days. Held good. NMR Energy is proposing to scrape the surface with a backhoe and have the contaminated soil hauled off. We will then replace with fresh caliche and Describe Area Affected and Cleanup Action Taken.* I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal. state. or local laws and/or regulations. OIL CONSER ATION DIVISION Approved by Environmental Special vironmental Specialis Printed Name: Daniel Baker Approval Date: 4/30/13 Expiration Date: 7/01 Title: VP of Engineering E-mail Address: dbaker@tumblewcedllc.com Conditions of Approval: CONFIRMATION

Attach Additional Sheets If Necessary

Phone: (432) 559-7520

4/18/2013

WHICH DISPLAYS THAT THE CONTRAMINATION WAS ADEQUATELY BELINEATED AND REMEDIATED. FINAL C-141 DUE BY 7/01/13

SAMPLING SHUVLID BE PERRORMED

Attached 🗌

IRP-4-13-2913

Water Well Data Average Depth to Groundwater (ft) NMR - Barnhill and Post Tank Battery Lea County, New Mexico

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

31	32	33	34	35	36
1000	15 :	South	;	36 Eas	t
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

28

27

26

25

29

	13 S	outh	:	37 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 40
31	32	33	75 34	55 35 65	36 78 40
				80	65

	14 Sc	outh	37	7 East	
6 85	5	4	3 32	2 55 46	1 85 50
7	8 42	9	10 62	11 85 60	12 85
18	17	16	15 50	14 100	13 120
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

15	South	:	37 Eas	t
5	4	3	2	1
8	9	10	11	12
17	16	15	14	13
20	21	22	23	24
29	28	27	26	25
32	33	34	35	36
	5 8 17 20 29	8 9 17 16 20 21 29 28	5 4 3 8 9 10 17 16 15 20 21 22 29 28 27	5 4 3 2 8 9 10 11 17 16 15 14 20 21 22 23 29 28 27 26

	13 5	South	;	38 East
6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19 53	20 40	21	22	23
30 85	29	28	27	26
31 87	32	33	34	35

	14 Sc	outh	38	East
6 77	5 45	4	3	2
7	8	9 45	10	11
18 115	17	16	15	14
19 40 65	20	21	22	23
30	29	28	27	26
31	32	33	34	35

	15 Sc	outh	38	East
6	5	4	3	2
7	8	9	10	11
18	17	16	15	14
19	20	21	22	23
30	29	28	27	26
31	32	33	34	35

- 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
- 123 Tetra Tech installed temporary wells and field water level
- 143 NMOCD Groundwater map well location

Report Date: October 18, 2012

Work Order: 12101038

Page Number: 1 of 2

Report Date: October 18, 2012

Work Order: 12101038

Summary Report

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

Project Location:Lea Co., NMProject Name:NMR Energy LLC/Barnhill Tank BatteryProject Number:114-6401374

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
311453	T-1 (0-1')	soil	2012-10-09	00:00	2012-10-10
311454	T-1 (2')	soil	2012-10-09	00:00	2012-10-10
311455	T-1 (4')	soil	2012-10-09	00:00	2012-10-10
311456	T-1 (5')	soil	2012-10-09	00:00	2012-10-10
311457	T-2 (0-1')	soil	2012-10-09	00:00	2012-10-10
311458	T-2 (2')	soil	2012-10-09	00:00	2012-10-10
311459	T-2(4')	soil	2012-10-09	00:00	2012-10-10
311460	T-2 (6')	soil	2012-10-09	00:00	2012-10-10

		1	BTEX		TPH DRO - NEW	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
311453 - T-1 (0-1')	< 0.0200	< 0.0200	< 0.0200	< 0.0200	3160	1.03
311454 - T-1 (2')					<50.0	19.9
311457 - T-2 (0-1')	< 0.0200	< 0.0200	< 0.0200	< 0.0200	<50.0	<1.00

Sample: 311453 - T-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		2230	mg/Kg	4

Sample: 311454 - T-1 (2')

Param	Flag	Result	Units	RL
Chloride		2510	mg/Kg	4

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

Report Date: Octol	per 18, 2012	Page	Number: 2 of 2	
Sample: 311455 -	· T-1 (4')			
Param	Flag	Result	Units	RI
Chloride		2830	mg/Kg	4
Sample: 311456 -	· T-1 (5')			
Param	Flag	Result	Units	RI
Chloride		1010	mg/Kg	4
Sample: 311457 -	· T-2 (0-1')			
Param	Flag	Result	Units	RI
Chloride		76.7	mg/Kg	4
Sample: 311458 -	T-2 (2')			
Param	Flag	Result	Units	RI
Chloride		744	mg/Kg	4
Sample: 311459 -	T-2 (4')			
Param	Flag	Result	Units	RL
Chloride		749	mg/Kg	4
Sample: 311460 -	- T-2 (6')			
Param	Flag	Result	Units	RL
Chloride		389	mg/Kg	4

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6701 Aberdeen Avenue, Suite 9 200 East Sunset Road, Suite E 5002 Basin Street, Suite A1 (BioAquatic) 2501 Mayes Rd., Suite 100

Lubbock, Texas 79424 El Paso, Texas 79922 Midland, Texas 79703 Carroliton. Texas 75006 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

800-378-1296 806-794-1296 915-585-3443 432-689-6301 972-242 -7750

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

Certifications

DBE NELAP DoD LELAP WBE HUB NCTRCA Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: October 18, 2012

Work Order: 12101038 ألجن فلابنا فلبنا فلننا فلننا فتتنا فلننا فلننا فتنت

Project Location: Lea Co., NM NMR Energy LLC/Barnhill Tank Battery Project Name: **Project Number:** 114-6401374

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	Received
311453	T-1 (0-1')	soil	2012-10-09	00:00	2012-10-10
311454	T-1 (2')	soil	2012-10-09	00:00	2012-10-10
311455	T-1 (4')	soil	2012-10-09	00:00	2012-10-10
311456	T-1 (5')	soil	2012-10-09	00:00	2012-10-10
311457	T-2 (0-1')	soil	2012-10-09	00:00	2012-10-10
311458	T-2 (2')	soil	2012-10-09	00:00	2012-10-10
311459	T-2 (4')	soil	2012-10-09	00:00	2012-10-10
311460	T-2 (6')	soil	2012-10-09	00:00	2012-10-10

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

This report consists of a total of 28 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

Michael abel

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

Report Contents

Case	Narrative	

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Sample 311454 (T-1 (2'))	. 7
Sample 311455 (T-1 (4'))	. 8
Sample 311456 (T-1 (5'))	. 8
Sample 311457 (T-2 (0-1'))	
Sample 311458 (T-2 (2'))	
Sample 311459 (T-2 (4'))	
Sample 311460 (T-2 (6'))	
	10
Method Blanks	12
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QC Batch 95682 - Method Blank (1)	
QC Batch 95757 - Method Blank (1)	
QC Batch 95758 - Method Blank (1)	
QC Batch 95773 - Method Blank (1)	
QC Batch 95818 - Method Blank (1)	
QC Batch 95844 - Method Blank (1)	. 14
Laboratory Control Spikes	15
QC Batch 95681 - LCS (1)	
QC Batch 95682 - LCS (1)	
QC Batch 95757 - LCS (1)	
QC Batch 95758 - LCS (1)	
QC Batch 95773 - LCS (1)	
QC Batch 95818 - LCS (1)	
QC Batch 95844 - LCS (1)	
QC Batch 95681 - MS (1)	
QC Batch 95682 - MS (1)	
QC Batch 95757 - MS (1)	
QC Batch 95758 - MS (1)	
QC Batch 95773 - MS (1)	
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QC Batch 95757 - CCV (1)	
QC Batch 95757 - CCV (2)	
QC Batch 95758 - CCV (1)	
QC Batch 95758 - CCV (2)	. 24

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QC Batch 95773 - CCV (1)		 		
QC Batch 95773 - CCV (2)		 		
QC Batch 95773 - CCV (3)		 		
QC Batch 95773 - CCV (4)		 		• •
QC Batch 95818 - CCV (1)		 		
QC Batch 95818 - CCV (2)		 		
QC Batch 95818 - CCV (3)		 		
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QC Batch 95844 - CCV (3)				
Appendix				
Report Definitions	· · ·	 		
Laboratory Certifications		 		
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Case Narrative

Samples for project NMR Energy LLC/Barnhill Tank Battery were received by TraceAnalysis, Inc. on 2012-10-10 and assigned to work order 12101038. Samples for work order 12101038 were received intact at a temperature of -0.6 C.

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

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	Date
BTEX	S 8021B	81075	2012-10-09 at 14:39	95681	2012-10-11 at 14:39
Chloride (Titration)	SM 4500-Cl B	81143	2012-10-15 at 12:12	95757	2012-10-16 at 16:13
Chloride (Titration)	SM 4500-Cl B	81143	2012-10-15 at 12:12	95758	2012-10-16 at 16:14
TPH DRO - NEW	S 8015 D	81152	2012-10-16 at 08:00	95773	2012-10-17 at 08:28
TPH DRO - NEW	S 8015 D	81211	2012-10-17 at 09:00	95844	2012-10-18 at 15:14
TPH GRO	S 8015 D	81075	2012-10-09 at 14:39	95682	2012-10-11 at 14:39
TPH GRO	S 8015 D	81184	2012-10-17 at 08:34	95818	2012-10-17 at 08:34

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 12101038 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

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

Report Date: October 18, 2012 114-6401374 Work Order: 12101038 NMR Energy LLC/Barnhill Tank Battery Page Number: 6 of 28 Lea Co., NM

Analytical Report

Sample: 311453 - T-1 (0-1')

Laboratory:	Midland										
Analysis:	BTEX		A	nalytical	l Method:	S 8021	B		Prep Metho		S 5035
QC Batch:	95681		D	ate Ana	lyzed:	2012-1	.0-11		Analyzed By	y:	YG
Prep Batch:	81075		S	ample P	reparation	n: 2012-1	.0-09		Prepared By	y:	YG
						RL					
Parameter		Flag		Cert		Result	Units	3	Dilution		RI
Benzene		U		1	<	< 0.0200	mg/Kg	S	1	1	0.0200
Toluene		υ		1	<	< 0.0200	mg/Kg	S	1		0.0200
Ethylbenzene	9	υ		1	<	< 0.0200	mg/Kg	5	1		0.0200
Xylene		υ		1	<	< 0.0200	mg/Kg	5	1		0.0200
								Spike	Percent		covery
Surrogate			Flag	Cert	Result	Units	Dilution	Amount	Recovery		imits
Trifluorotolue					1.87	mg/Kg		2.00	94		- 130
4-Bromofluor	obenzene (4-BFB)				1.85	mg/Kg	1	2.00	92	70	- 130
Laboratory: Analysis:	1453 - T-1 (0-1') Midland Chloride (Titratio 95757				ytical Me Analyzed		M 4500-Cl B 012-10-16		Prep Meth Analyzed		N/A AR
Laboratory: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titratio	on)		Date Samj	Analyzed ple Prepar	l: 2 ration: 2 RL	012-10-16 012-10-15	2	Analyzed Prepared 1	By:	AR AR
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland Chloride (Titratio 95757			Date	Analyzed ple Prepar	l: 2 ration: 2	012-10-16 012-10-15 Unit:		Analyzed	By:	AR AR RI
Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	Midland Chloride (Titratio 95757	on) Flag		Date Samj	Analyzed ple Prepar	l: 2 ration: 2 RL Result	012-10-16 012-10-15		Analyzed Prepared Dilution	By:	AR AR RI
Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 31 Laboratory:	Midland Chloride (Titrati 95757 81143 1453 - T-1 (0-1') Midland	on) Flag		Date Samj Cert	Analyzec ple Prepar	l: 2 ration: 2 RL Result 2230	012-10-16 012-10-15 Units mg/Kg		Analyzed I Prepared I Dilution 10	By: By:	AR AR RI 4.00
Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 31: Laboratory: Analysis:	Midland Chloride (Titratio 95757 81143 1453 - T-1 (0-1') Midland TPH DRO - NEV	on) Flag		Date Samj Cert	Analyzec ple Prepar	l: 2 ration: 2 RL Result 2230	012-10-16 012-10-15 		Analyzed I Prepared I Dilution 10 Prep Meth	By: By:	AR AR RI 4.00
Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride Sample: 31: Laboratory: Analysis: QC Batch:	Midland Chloride (Titrati 95757 81143 1453 - T-1 (0-1') Midland	on) Flag		Date Samj Cert Ana Dat	Analyzec ple Prepar	l: 2 ration: 2 RL Result 2230 ethod: d:	012-10-16 012-10-15 Units mg/Kg		Analyzed I Prepared I Dilution 10	By: By:	AR AR RI 4.00
Laboratory: Analysis: QC Batch: Prep Batch: Parameter Chloride	Midland Chloride (Titratio 95757 81143 1453 - T-1 (0-1') Midland TPH DRO - NEV 95773	on) Flag		Date Samj Cert Ana Dat	Analyzec ple Prepar	l: 2 ration: 2 RL Result 2230 ethod: aration:	012-10-16 012-10-15 Unit: mg/Kg S 8015 D 2012-10-17		Analyzed 1 Prepared 1 Dilution 10 Prep Meth Analyzed 1	By: By:	AR AR RI 4.00
Laboratory: Analysis: QC Batch: Prep Batch: Prep Batch: Chloride Sample: 31: Laboratory: Analysis: QC Batch:	Midland Chloride (Titratio 95757 81143 1453 - T-1 (0-1') Midland TPH DRO - NEV 95773	on) Flag		Date Samj Cert Ana Dat	Analyzec ple Prepar lytical Me e Analyze ple Prepa	l: 2 ration: 2 RL Result 2230 ethod: d:	012-10-16 012-10-15 Unit: mg/Kg S 8015 D 2012-10-17	5	Analyzed 1 Prepared 1 Dilution 10 Prep Meth Analyzed 1	By: By:	AR. RL 4.00

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Surrogate		Flag	Cer	t.	Result	Units	Diluti	on	Spike Amour		Percent Recovery	Recovery Limits
n-Tricosane	Qsr	Qsr			593	mg/Kg	5		100		593	55.1 - 135.7
Sample: 3114	453 - T	-1 (0-1')										
0	Midland							_			-	
	FPH GF	RO			U	al Method					Prep Meth	
	95682				Date An	U	2012-1				Analyzed 1	0
Prep Batch: 8	81075				Sample 1	Preparatio	n: 2012-1	0-09			Prepared I	By: YG
							RL					
Parameter			Flag		Cert]	Result		Units		Dilution	\mathbf{RL}
GRO					1		1.03		mg/Kg		1	1.00
										Spike	Percent	Recovery
Surrogate				Flag	Cert	Result	Units	Dilu	tion A	mount	Recovery	Limits
Trifluorotoluen	e (TFT)				1.82	mg/Kg	1		2.00	91	70 - 130
4-Bromofluorol	oenzene	(4-BFB)				1.75	mg/Kg	1		2.00	88	70 - 130

Sample: 311454 - T-1 (2')

Chloride			2510	mg/Kg	10	4.00
Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Prep Batch:	81143	Sample 1	Preparation:	2012-10-15	Prepared By:	AR
Laboratory: Analysis: QC Batch:	Midland Chloride (Titration) 95757	Date An	U	SM 4500-Cl B 2012-10-16	Prep Method: Analyzed By:	AR

Sample: 311454 - T-1 (2')

The stand of the local division of the stand					0/ 0	the second s		
DRO		Ъ	1	<50.0	mg/Kg	1	50.0	1
Parameter		Flag	Cert	RL Result	Units	Dilution	RL	
Prep Batch:	81211		Sample	Preparation:	2012-10-17	Prepared By:	CW	
QC Batch:	95844		Date A	nalyzed:	2012-10-18	Analyzed By:	CW	
Analysis:	TPH DRO - N	IEW	Analyti	cal Method:	S 8015 D	Prep Method:		
Laboratory:	Midland							

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Surrogate F	lag Ce	rt I	Result	Units	Diluti	-	ike ount 1	Percent Recovery	Recovery Limits
n-Tricosane			94.4	mg/Kg	1	1()()	94	55.1 - 135.7
Sample: 311454 - T-1	(2')								
Laboratory: Midland Analysis: TPH GRO			Analytic	al Method:	S 8015	D		Prep Meth	od: S 5035
QC Batch: 95818			Date An		2012-1			Analyzed I	
Prep Batch: 81184				Preparation				Prepared I	v
					RL				
Parameter	Fla	r.	Cert	R	esult	Uni	ts	Dilution	RL
GRO	В		1		19.9	mg/k	g	1	4.00
							Spike	Percent	Recovery
Surrogate		Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)				1.99	mg/Kg	1	2.00	100	70 - 130
4-Bromofluorobenzene (4-	-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Sample: 311455 - T-1 (4')

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: Chloride (Titration) QC Batch: 95757		Analytical Method: Date Analyzed: Sample Preparation:		SM 4500-Cl B 2012-10-16 2012-10-15	Prep Method: Analyzed By: Prepared By:	AR
Parameter		Flag	Cert	RL Result	Units	Dilution	RL
Chloride				2830	mg/Kg	10	4.00

Sample: 311456 - T-1 (5')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95757	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

continued ...

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sample 311456 continued									
					RL				
Parameter	Flag		Cert		Result	Units	3	Dilution	RI
					RL				
Parameter	Flag		Cert		Result	Units	3	Dilution	RI
Chloride	0				1010	mg/Kg		10	4.00
Sample: 311457 - T-2 (0-1') Laboratory: Midland Analysis: BTEX		A	nalvtical	Method:	S 8021E	3		Prep Method	: S 5035
Laboratory: Midland Analysis: BTEX QC Batch: 95681		Γ	Date Anal	Method: yzed: reparation	2012-10	-11		Prep Method Analyzed By: Prepared By:	YG
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075		Γ	Date Anal Sample Pr	yzed:	2012-10 2012-10 RL	-11 -09		Analyzed By: Prepared By:	YG YG
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter	Flag	Γ	Date Anal	lyzed: reparation	2012-10 a: 2012-10 RL Result	-11 -09 Units		Analyzed By: Prepared By: Dilution	YG YG RI
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene	Flag	Γ	Date Anal Sample Pr	lyzed: reparation	2012-10 a: 2012-10 RL Result <0.0200	-11 -09 		Analyzed By: Prepared By: Dilution	YG YG RI 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene Toluene	U U	Γ	Date Anal Cample Pr Cert	lyzed: reparation < <	2012-10 n: 2012-10 RL Result <0.0200 <0.0200	-11 -09 Units mg/Kg mg/Kg		Analyzed By: Prepared By: Dilution 1 1	YG YG RI 0.0200 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene Toluene Ethylbenzene	υ υ υ	Γ	Date Anal Sample Pr Cert	lyzed: reparation < < <	2012-10 RL Result (0.0200 (0.0200 (0.0200	-11 -09 Units mg/Kg mg/Kg mg/Kg		Analyzed By: Prepared By: Dilution 1 1 1	YG YG 0.0200 0.0200 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene	U U	Γ	Date Anal Cample Pr Cert	lyzed: reparation < < <	2012-10 n: 2012-10 RL Result <0.0200 <0.0200	-11 -09 Units mg/Kg mg/Kg		Analyzed By: Prepared By: Dilution 1 1	YG YG RI 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene Toluene Ethylbenzene	U U U	Γ	Date Anal Sample Pr Cert	lyzed: reparation < < <	2012-10 RL Result (0.0200 (0.0200 (0.0200	-11 -09 Units mg/Kg mg/Kg mg/Kg		Analyzed By: Prepared By: Dilution 1 1 1 1 1	YG YG RI 0.0200 0.0200 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene Toluene Ethylbenzene Xylene	บ บ บ บ	Γ	Date Anal Sample Pr Cert	lyzed: reparation < < <	2012-10 RL Result (0.0200 (0.0200 (0.0200	-11 -09 Units mg/Kg mg/Kg mg/Kg		Analyzed By: Prepared By: Dilution 1 1 1 1 1	YG YG 0.0200 0.0200 0.0200 0.0200
Laboratory: Midland Analysis: BTEX QC Batch: 95681 Prep Batch: 81075 Parameter Benzene Toluene Ethylbenzene	บ บ บ บ	I S	Cert 1 1 1 1	lyzed: reparation < < < <	2012-10 RL Result (0.0200 (0.0200 (0.0200 (0.0200	-11 -09 <u>Units</u> mg/Kg mg/Kg mg/Kg	Spike	Analyzed By: Prepared By: Dilution 1 1 1 1 1 Percent	YG YG 0.0200 0.0200 0.0200 0.0200 Recovery

Sample: 311457 - T-2 (0-1')

Laboratory: Analysis: QC Batch: Prep Batch:	Analysis: Chloride (Titration)		Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2012-10-16 2012-10-15	Prep Method: Analyzed By: Prepared By:	AR
			G .	RL	TT	Dilari	DI
Parameter		Flag	Cert	Result	Units	Dilution	RL
Chloride				76.7	mg/Kg	5	4.00

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Sample: 31	1457 - T-2 (0-1	')									
Laboratory: Analysis: QC Batch: Prep Batch:	Midland TPH DRO - NE 95773 81152	EW		Da	alytical M te Analyz nple Prep	xed: 2	8015 D 012-10-17 012-10-16		Prep Me Analyzee Preparec	l By:	N/A CW CW
						RL					
Parameter		Flag		Cert		Result	Uni		Dilution		RL
DRO		U		1		<50.0	mg/F	ζg	1		50.0
Surrogate	Flag	Cert	R	lesult	Units	Diluti		ike ount	Percent Recovery	Recov Limi	
n-Tricosane				89.7	mg/Kg	1	10	00	90	55.1 - 1	35.7
Laboratory: Analysis: QC Batch:	1457 - T-2 (0-1 Midland TPH GRO 95682	')		Date An		2012-1	0-11		Prep Meth Analyzed I	By: YO	G
Laboratory: Analysis: QC Batch:	Midland TPH GRO			Date An Sample		2012-1 on: 2012-1 RL	0-11 0-09		Analyzed I Prepared E	By: YO	75 F5
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH GRO 95682	Flag		Date An Sample	nalyzed:	2012-1 on: 2012-1 RL Result	0-11 0-09 Uni		Analyzed I Prepared E Dilution	By: Y(By: Y(G RL
Laboratory: Analysis: QC Batch: Prep Batch: Parameter	Midland TPH GRO 95682			Date An Sample	nalyzed:	2012-1 on: 2012-1 RL	0-11 0-09		Analyzed I Prepared E	By: Y(By: Y(75 F5
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO	Midland TPH GRO 95682	Flag	Flag	Date An Sample	nalyzed:	2012-1 on: 2012-1 RL Result	0-11 0-09 Uni		Analyzed I Prepared E Dilution 1 Percent	By: Y(By: Y(G RL 1.00 very
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO Surrogate Trifluorotolue	Midland TPH GRO 95682 81075 ene (TFT)	Flag U	Flag	Date An Sample Cert	nalyzed: Preparati Result 2.35	2012-1 on: 2012-1 RL Result <1.00 Units mg/Kg	0-11 0-09 Uni mg/k Dilution 1	Spike Amount 2.00	Analyzed I Prepared E Dilution 1 Percent t Recovery 118	By: Y(By: Y(By: Y(Reco Lim 70 -	RL 1.00 very iits 130
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO Surrogate Trifluorotolue	Midland TPH GRO 95682 81075	Flag U	Flag	Date An Sample Cert	nalyzed: Preparati Result	2012-1 on: 2012-1 RL Result <1.00 Units	0-11 0-09 Uni mg/k Dilution	Kg Spike Amount	Analyzed I Prepared E Dilution 1 Percent t Recovery	By: YO By: YO Reco Lim	RL 1.00 very uits 130
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO Surrogate Trifluorotoluc 4-Bromofluor Sample: 31 Laboratory: Analysis:	Midland TPH GRO 95682 81075 ene (TFT)	Flag U	Flag	Date An Sample	Result 2.35 1.86	2012-1 on: 2012-1 RL Result <1.00 Units mg/Kg mg/Kg	0-11 0-09 Uni mg/k Dilution 1	Spike Amoun 2.00 2.00	Analyzed I Prepared E Dilution 1 Percent t Recovery 118 93	By: Y(By: Y(Reco Lim 70 - 70 -	RL 1.00 very uits 130
Laboratory: Analysis: QC Batch: Prep Batch: Parameter GRO Surrogate Trifluorotoluc 4-Bromofluor Sample: 31 Laboratory:	Midland TPH GRO 95682 81075 ene (TFT) robenzene (4-BFB 1458 - T-2 (2') Midland	Flag U	Flag	Date An Sample Cert Cert Anal Date	Result 2.35 1.86	2012-1 on: 2012-1 RL Result <1.00 Units mg/Kg mg/Kg mg/Kg d: 20	0-11 0-09 <u>Unimg/K</u> Dilution 1 1	Spike Amoun 2.00 2.00	Analyzed I Prepared E Dilution 1 Percent t Recovery 118 93	By: Y() By: Y() Recco Lim 70 - 70 - 70 - 1 By: I	G RL 1.00 very iits 130 130

			RL			
Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride			744	mg/Kg	5	4.00

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Sample: 31	1459 - T-2 (4')						
Laboratory:	Midland						
Analysis:	Chloride (Titration)	Analytic	al Method:	SM 4500-Cl B	Prep Method	N/A	
QC Batch:	95758	Date An	alyzed:	2012-10-16	Analyzed By:	AR	
Prep Batch:	81143	Sample 1	Preparation:	2012-10-15	Prepared By:	AR	
			RL				
Parameter	Flag	Cert	Result	Units	Dilution	RL	
Chloride			749	mg/Kg	5	4.00	

Sample: 311460 - T-2 (6')

Laboratory: Analysis: QC Batch: Prep Batch:	Chloride (Titrati 95758	on)	Date An	al Method: alyzed: Preparation:	SM 4500-Cl B 2012-10-16 2012-10-15	Prep Method: Analyzed By: Prepared By:	AR
				RL			
Parameter		Flag	Cert	Result	Units	Dilution	RL
Chloride				389	mg/Kg	5	4.00

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Method Blanks

Method Blank	(1)	QC Batch:	95681
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QC Batch:	95681	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	QC Preparation:	2012-10-09	Prepared By:	YG

					MDL			
Parameter	Flag		Cert		Result		Units	RL
Benzene			1		< 0.00100	1	mg/Kg	0.02
Toluene			1		< 0.00100	1.0	mg/Kg	0.02
Ethylbenzene			1		< 0.00110	1	mg/Kg	0.02
Xylene			1		< 0.00360		mg/Kg	0.02
Channe and a	Flore	Cert	Result	Units	Dilution	Spike	Percent	Recovery
Surrogate	Flag	Cert			Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.85	mg/Kg	1	2.00	92	70 - 130

Method Blank (1) QC Batch: 95682

QC Batch: 95682 Prep Batch: 81075			nalyzed: eparation:	2012-10-1 2012-10-0			U	By: YG By: YG
Parameter	Flag		Cert		MDL Result		Units	RL
GRO			1		< 0.482		mg/Kg	1
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.84	mg/Kg	1	2.00	92	70 - 130
4-Bromofluorobenzene (4-BFB)			1.72	mg/Kg	1	2.00	86	70 - 130

Method E	Blank (1)	QC Batch:	95757	
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QC Batch:	95757	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	QC Preparation:	2012-10-15	Prepared By:	AR

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Parameter		Flag	5	Cert		MDL Result	Units		RL	
Chloride						<3.85	m mg/Kg		4	
Method Blank (1)	QC	Batch: 95758	3							
QC Batch: 95758			Date	Analyzed:	2012-10-16		Analy	zed By:	AR	
Prep Batch: 81143				Preparation:	2012-10-15			red By:	AR.	
						MDL				
Parameter		Flag	5	Cert		Result	Units		RL	
Chloride						<3.85	mg/Kg		4	
Method Blank (1)	QC	Batch: 95773	3							
QC Batch: 95773			Date	Analyzed:	2012-10-17		Analyz	ed By:	CW	
Prep Batch: 81152				reparation:	2012-10-16		Prepar		CW	
						MDL				
Parameter		Flag		Cert		Result	Units		RL	
DRO				1		<15.7	mg/Kg		50	
						Spike	Percent	Reco		
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Lin		
n-Tricosane			89.1	mg/Kg	1	100	89	61.6 -	141.2	

Method Blank (1) QC Batch: 95818

QC Batch: 95818 Prep Batch: 81184			nalyzed: eparation:	2012-10-1 2012-10-1			0	l By: YG By: YG
Parameter	Flag		Cert		MDL Result		Units	RL
GRO			1		<1.22		mg/Kg	4
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			0.0945	mg/Kg	1	0.00	94	70 - 130
					cont	inued		

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method blank	continue	d	-					Spike	Percent	Recovery
Surrogate			Flag	Cert	Result	Units	Dilution	Amount		Limits
4-Bromofluor	obenzene	(4-BFB)	0		0.0786	mg/Kg	1	0.00	78	70 - 130
QC Batch:	95844	QC B	atch: 95844		nalyzed:	2012-10-18			Analyzee	v
Method Bla QC Batch: Prep Batch:	. ,	QC B	atch: 95844		nalyzed: paration:	2012-10-18 2012-10-17	MDL		Analyzee Prepared	v
QC Batch:	95844	QC B	atch: 95844 Flag				MDL Result		0	By: CW
QC Batch: Prep Batch:	95844	QC B			paration:			t	Preparec	By: CW
QC Batch: Prep Batch: Parameter	95844	QC B	Flag		eparation: Cert		Result 27.4 Spi		Prepared	I By: CW

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Laboratory Control Spikes

Laboratory Control Spike (LCS-1)

QC Batch:	95681	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	QC Preparation:	2012-10-09	Prepared By:	YG

				LCS			Spike	Matrix		Rec.
Param	I	2	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene			1	1.89	mg/Kg	1	2.00	< 0.00100	94	70 - 130
Toluene			1	1.88	mg/Kg	1	2.00	< 0.00100	94	70 - 130
Ethylbenzene			i	1.81	mg/Kg	1	2.00	< 0.00110	90	70 - 130
Xylene			1	5.72	mg/Kg	1	6.00	< 0.00360	95	70 - 130

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

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	C	Result	Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit
Benzene		1	1.92	mg/Kg	1	2.00	< 0.00100	96	70 - 130	2	20
Toluene		1	1.91	mg/Kg	1	2.00	< 0.00100	96	70 - 130	2	20
Ethylbenzene		1	1.82	mg/Kg	1	2.00	< 0.00110	91	70 - 130	1	20
Xylene		1	5.74	mg/Kg	1	6.00	< 0.00360	96	70 - 130	0	20

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	1.91	1.96	mg/Kg	1	2.00	96	98	70 - 130
4-Bromofluorobenzene (4-BFB)	1.90	1.93	mg/Kg	1	2.00	95	96	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 95682 Prep Batch: 81075			ate Analyze C Preparat	ed: 2012- ion: 2012-				U	By: YG By: YG
Deserve	D	C	LCS Result	Units	Dil.	Spike	Matrix Result	Dec	Rec.
Param	Г	C	nesun	Units	DII.	Amount	nesun	Rec.	Limit
GRO		1	17.7	mg/Kg	1	20.0	< 0.482	88	70 - 130

<u>Percent recovery is based on the spike result.</u> RPD is based on the spike and spike duplicate result.

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control spikes continued												
			LCSD			Spike	Matrix			ec.		RPD
Param	F	С	Result	Units 1	Dil.	Amount	Result	Rec.	Li	mit	RPD	Limi
			LCSD			Spike	Matrix		R	ec.		RPL
Param	F	\mathbf{C}	Result	Units I	Dil.	Amount	Result	Rec.	Li	mit	RPD	Limi
GRO		1	17.4	m mg/Kg	1	20.0	< 0.482	87	70 -	130	2	20
Percent recovery is based on the s	spike	resu	lt. RPD is	based on t	the spil	ke and s	pike dupli	cate res	sult.			
			LCS	LCSD			Sr	oike	LCS	LC	SD	Rec.
Surrogate			Result		Uı	nits l		ount	Rec.	Re		Limit
Trifluorotoluene (TFT)			2.05	2.09		g/Kg		.00	102	10		70 - 13
4-Bromofluorobenzene (4-BFB)			1.94	1.88		g/Kg		.00	97	9		70 - 13
			QC Pre	nalyzed: eparation:	2012- 2012-	-10-16 -10-15				Analy Prepa	ared By	y: AR
Prep Batch: 81143 Param		F	QC Pre	eparation: CS sult U	2012- nits		Spike Amoun 2500	t R	latrix cesult		ared By ec.	7: AR Rec. Limit
Prep Batch: 81143 Param Chloride	pike		QC Pre	eparation: CS sult U 30 mg	2012- nits g/Kg	-10-15 Dil. 1	Amoun 2500	t R	esult	Prepa	ared By ec.	7: AR Rec. Limit
Prep Batch: 81143 Param Chloride	pike		QC Pre	eparation: CS sult U 30 mg	2012- nits g/Kg	$\frac{\text{Dil.}}{1}$ ke and sj	Amoun 2500 pike duplio	t R	cesult c3.85 sult.	Prepa Re 10	ared By ec.	7: AR Rec. Limit 85 - 11
Prep Batch: 81143 Param Chloride Percent recovery is based on the s		resu	QC Pre	paration: CS sult U 30 mg based on t	2012- nits g/Kg the spil	-10-15 Dil. 1 ke and sj Spike	Amoun 2500 pike duplio Matrix	t R < cate res	tesult <3.85 sult. Re	Prepa Re 10 ec.	ec.	7: AR Rec. Limit 85 - 11: RPD
Prep Batch: 81143 Param Chloride	pike F		QC Pre	paration: CS sult U 30 mg based on t	2012- nits g/Kg the spil	$\frac{\text{Dil.}}{1}$ ke and sj	Amoun 2500 pike duplio	t R	tesult 3.85 sult. Ra Lin	Prepa Re 10	ared By ec.	7: AR Rec. Limit 85 - 113 RPI
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param Chloride Percent recovery is based on the s	F	resul	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg	2012- nits g/Kg the spil Dil. 4	Dil. 1 ke and sj Spike Amount 2500	Amoun 2500 pike duplid Matrix Result <3.85	t R cate res Rec. 104	tesult <3.85 sult. Ra Lin 85 -	Prepa Re 10 ec. mit	ec. NPD	7: AR Rec. Limit 85 - 111 RPI Limi
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param Chloride Percent recovery is based on the s	F	resul	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg	2012- nits g/Kg the spil Dil. 4	Dil. 1 ke and sj Spike Amount 2500	Amoun 2500 pike duplid Matrix Result <3.85	t R cate res Rec. 104	tesult <3.85 sult. Ra Lin 85 -	Prepa Re 10 ec. mit	ec. NPD	7: AR Rec. Limit 85 - 11 RPI Limi
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param Chloride Percent recovery is based on the s Laboratory Control Spike (LO	F	resul	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg based on t	2012- nits g/Kg he spil	Dil. 1 ke and sj Spike Amount 2500 ke and sj	Amoun 2500 pike duplid Matrix Result <3.85	t R cate res Rec. 104	tesult <3.85 sult. Ra Lin 85 -	Prepa Re 10 ec. mit 115	ec. 01 RPD 3	7: AR Rec. Limit 85 - 111 RPL Limi 20
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param	F	resul	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg	2012- nits g/Kg the spil Dil. 4	Dil. 1 ke and sj Spike Amount 2500 ke and sj	Amoun 2500 pike duplid Matrix Result <3.85	t R cate res Rec. 104	cesult c3.85 sult. Ro Lin 85 - sult.	Prepa Re 10 ec. mit 115	ec. NPD	r: AR Rec. Limit 85 - 11: RPI Limi 20
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param Chloride Percent recovery is based on the s Laboratory Control Spike (LC QC Batch: 95758 Prep Batch: 81143	F pike	C C result	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg based on t nalyzed: paration: CS	2012- nits g/Kg the spil Dil. 4 1 the spil 2012- 2012-	Dil. 1 ke and sp Spike Amount 2500 ke and sp 10-16 10-15	Amoun 2500 pike duplic Matrix Result <3.85 pike duplic Spike	t R cate res Rec. 104 cate res	asult 3.85 sult. Ro Lin 85 - sult. fatrix	Prepa Re 10 ec. mit 115 Analy Prepa	red By RPD 3 vzed By vzed By	7: AR Rec. Limit 85 - 113 RPD Limit 20 7: AR 7: AR 7: AR 7: AR 8: AR
Prep Batch: 81143 Param Chloride Percent recovery is based on the s Param Chloride Percent recovery is based on the s Laboratory Control Spike (LC QC Batch: 95758	F pike	resul	QC Pre	paration: CS sult U 30 mg based on t Units I mg/Kg based on t nalyzed: paration: CS sult U	2012- nits g/Kg he spil Dil. 1 1 he spil	Dil. 1 ke and sj Spike Amount 2500 ke and sj	Amoun 2500 pike duplic Matrix Result <3.85 pike duplic	t R cate res Rec. 104 cate res M t R	cesult c3.85 sult. Ro Lin 85 - sult.	Prepa Re 10 ec. mit 115	red By RPD 3 vzed By vzed By ec.	7: AR Rec. Limit 85 - 113 RPD Limit 20

				NMR	Work C Energy LI		12101038 nhill Tank	Battery		Page Nu	umber: 1 Lea C	17 of 2 Co., NI
control spikes	continued			LCSD			Spike	Matrix		Rec.		RPI
Param		F	C	Result	Units	Dil.	Amount		Rec.	Limit	RPD	Limi
				LCSD			Spike	Matrix		Rec.		RPE
Param		F	С	Result		Dil.	Amount		Rec.	Limit	RPD	Limi
Chloride				2670	mg/Kg	1	2500	<3.85	107	85 - 115	4	20
Laboratory (Control Spike (L	/CS-1	1)									
			/									
•	95773				Analyzed		2-10-17				zed By:	
Prep Batch:	81152			QC 1	Preparatio	n: 201	2-10-16			Prepa	red By:	CW
D			D		LCS	TT	D:1	Spike	Matr			lec.
Param			F			Units	Dil.	Amount	Resu			imit
DRO		_		1	183 n	ng/Kg	1	250	<15.	7 73	66.9	- 119.
Param DRO		F	C	LCSD Result 171	Units mg/Kg	Dil.	Spike Amount 250	Matrix Result 1 <15.7	Rec. 68 60	Rec. Limit 6.9 - 119.9	RPD 7	RPD Limit 20
Percent recove	ry is based on the	spike	resu	ılt. RPD	is based o	on the s	pike and a	spike dupli	cate resu	ılt.		
		LC	S	LCSD				Spike	LCS	LCSD	R	ec.
Surrogate		Rest		Result		ts	Dil.	Amount	Rec.	Rec.		mit
n-Tricosane		86.		79.3	mg/l		1	100	86	79		- 140.2
					0/	0						
Laboratory (Control Spike (L	CS-1	L)									
QC Batch:	95818			Date	Analyzed	· 201	2-10-17			Analy	zed By:	VG
Prep Batch: 8					Preparatio					-	red By:	
rop Daten.	51101				reputatio		2 10 11			riopa	aca by.	10
					LCS			Spike	Ma	atrix		Rec.
			F	С	Result	Units	Dil.	Amoun		esult Re		Limit
Param				1	21.9	mg/Kg		20.0		3.6 11	the second s) - 130
					and the second sec		and the second sec					
GRO	ry is based on the	spike	resu	iit. RPD	is based o	on the s	pike and a	spike dupin	case reat			
GRO	ry is based on the	spike	resu		is based o	on the s			000 1000			RDD
Param GRO Percent recover Param	ry is based on the	spike F	resu	LCSD Result	Units	Dil.	Spike Amount	Matrix	Rec.	Rec. Limit	RPD	RPD Limit

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76.8 - 140.2

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

	LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)	2.03	2.00	mg/Kg	1	2.00	102	100	70 - 130
4-Bromofluorobenzene (4-BFB)	2.10	2.10	mg/Kg	1	2.00	105	105	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch:	95844	Date Analyzed:	2012-10-18	Analyzed By:	CW
Prep Batch:	81211	QC Preparation:	2012-10-17	Prepared By:	CW

			LCS			Spike	Matrix		Rec.
Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
DRO		1	282	mg/Kg	1	250	27.4	102	66.9 - 119.9

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

92.7

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Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	242	mg/Kg	1	250	27.4	86	66.9 - 119.9	15	20
Percent recovery is bas	ed on the spike	rest	ult. RPD	is based	on the	spike and	spike dup	olicate	result.		
	LC	S	LCSD				Spike	LC	S LCSD	I	Rec.
Surrogate	Resu	ılt	Result	Un	its	Dil.	Amount	Rec	. Rec.	L	imit

mg/Kg

1

100

Matrix Spike (MS-1) Spiked Sample: 311465

n-Tricosane

QC Batch: Prep Batch:	95681 81075	Date Analyzed: QC Preparation:			Analyzed By: Prepared By:	
		MS	Spike	Matrix		Rec.

Param	\mathbf{F}	\mathbf{C}	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1	2.31	mg/Kg	1	2.00	< 0.00100	116	70 - 130
Toluene		1	2.33	mg/Kg	1	2.00	< 0.00100	116	70 - 130
Ethylbenzene		1	2.26	mg/Kg	1	2.00	< 0.00110	113	70 - 130
Xylene		1	7.12	mg/Kg	1	6.00	< 0.00360	119	70 - 130

 $\frac{\text{Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.}{\textit{continued} \dots}$

Report Date: October 18, 2012 114-6401374			NMR			12101038 rnhill Tanl	k Battery		Page	e Number Lea	: 19 of 28 Co., NN
matrix spikes continued						(1 - 1)			Ð		222
Param	F	\mathbf{C}	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec Limi		RPD D Limit
	1	0	nesut	011105	, Dii.	Amount	nesun	nec.	171111		
			MSD			Spike	Matrix		Rec		RPD
Param	F	\mathbf{C}	Result	Units		Amount	Result	Rec.	Limi		
Benzene		1	2.34	mg/Kg	g 1	2.00	< 0.00100	117	70 - 1	.30 1	20
Toluene		1	2.35	mg/Kg		2.00	< 0.00100	118	70 - 1		20
Ethylbenzene		1	2.30	mg/Kg		2.00	< 0.00110	115	70 - 1	.30 2	20
Xylene		1	7.24	mg/Kg	g 1	6.00	< 0.00360	121	70 - 1	.30 2	20
Percent recovery is based on the	spike	e resi	ılt. RPD	is based	d on the	spike and	spike dupli	cate res	ult.		
			N	IS	MSD		S	pike	MS	MSD	Rec.
Surrogate			Re	sult I	Result	Units	Dil. An	nount	Rec.	Rec.	Limit
Trifluorotoluene (TFT)			1.	95	1.94	mg/Kg	1	2	98	97	70 - 13
			1	95	1.93	mg/Kg	1	2	98	96	70 - 130
4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spike	ed Sa	mple				0, 0					
Matrix Spike (MS-1) Spike	ed Sa	mple	: 311465						A	nalvzed I	sv: YG
Matrix Spike (MS-1) Spike QC Batch: 95682	ed Sa	mple	: 311465 Date	Analyz	ed: 20)12-10-11)12-10-09				nalyzed I repared E	v
Matrix Spike (MS-1) Spike QC Batch: 95682	ed Sa	mple	: 311465 Date	Analyz	ed: 20)12-10-11				U	v
Matrix Spike (MS-1) Spike QC Batch: 95682	ed Sa	mple	: 311465 Date	Analyz Preparat	ed: 20)12-10-11		М	Pi	U	y: YG
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075	ed Sa		:: 311465 Date QC 1	Analyz Preparat MS	ed: 20 tion: 20)12-10-11)12-10-09	Spike		Pi atrix	repared E	y: YG Rec.
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param	ed Sa	mple	:: 311465 Date QC 1	Analyz Preparat MS Result	ed: 20 tion: 20 Unit)12-10-11)12-10-09 s Dil.		t Re	Pi	U	y: YG
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO		F	:: 311465 Date QC 1 C 1	Analyz Preparat MS Result 15.8	ed: 20 tion: 20 Unit mg/k	012-10-11 012-10-09 s Dil. 5g 1	Spike Amoun 20.0	t Re	Pr atrix esult).482	repared E Rec.	y: YG Rec. Limit
Matrix Spike (MS-1) Spike QC Batch: 95682		F	:: 311465 Date QC 1 C 1	Analyz Preparat MS Result 15.8	ed: 20 tion: 20 Unit mg/k	012-10-11 012-10-09 s Dil. 5 1 spike and	Spike Amoun 20.0	t Re	Pr atrix esult).482	Rec.	y: YG Rec. Limit
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO		F	:: 311465 Date QC I 	Analyz Preparat MS Result 15.8	ed: 20 tion: 20 Unit mg/K d on the	012-10-11 012-10-09 s Dil. 5g 1 spike and s Spike	Spike Amoun 20.0 spike duplic Matrix	t Re	Pr atrix esult).482 ult.	Rec.	y: YG Rec. Limit 70 - 130 RPD
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO Percent recovery is based on the Param	spike	F	: 311465 Date QC 1 C 1 I It. RPD MSD	Analyz Preparat MS Result 15.8 is based	ed: 20 tion: 20 Unit mg/k d on the s Dil.	012-10-11 012-10-09 s Dil. 5g 1 spike and s Spike	Spike Amoun 20.0 spike duplic Matrix	t Re <(Pr atrix esult 0.482 ult. Rec.	Rec. 79 t RPI	y: YG Rec. Limit 70 - 130 RPD
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO Percent recovery is based on the	spike	F e resu C	C I Date QC I C I I It. RPD MSD Result 15.8	Analyz Preparat MS Result 15.8 is based Unit: mg/K	$\frac{\text{Unit}}{\text{Unit}}$ $\frac{\text{Unit}}{\text{mg/k}}$ $\frac{\text{d on the}}{\text{s}}$ $\frac{\text{Dil.}}{\text{\zeta g}}$ 1	012-10-11 012-10-09 s Dil. Sg 1 spike and Spike Amount 20.0	Spike Amoun 20.0 spike duplic Matrix Result <0.482	t Re <(cate rest Rec. 79	Patrix esult 0.482 ult. Rec. Limit 70 - 13	Rec. 79 t RPI	Rec. Limit 70 - 130 RPD Limit
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO Percent recovery is based on the Param GRO	spike	F e resu C	C I Date QC I C I I It. RPD MSD Result 15.8	Analyz Preparat MS Result 15.8 is based Unit: mg/K is based	$\frac{\text{Unit}}{\text{Unit}}$ $\frac{\text{Unit}}{\text{mg/k}}$ $\frac{\text{d on the}}{\text{s}}$ $\frac{\text{Dil.}}{\text{\zeta g}}$ 1	012-10-11 012-10-09 s Dil. Sg 1 spike and Spike Amount 20.0	Spike Amoun 20.0 spike duplie Matrix Result <0.482 spike duplie	t Re <(cate rest Rec. 79	Patrix esult 0.482 ult. Rec. Limit 70 - 13	Rec. 79 t RPI	Rec. Limit 70 - 130 RPD Limit
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO Percent recovery is based on the Param GRO	spike	F e resu C	C I Date QC I C I I It. RPD MSD Result 15.8 Ilt. RPD	Analyz Preparat MS Result 15.8 is based Unit: mg/K is based IS	$\frac{\text{Unit}}{\text{Img/K}}$	012-10-11 012-10-09 s Dil. Sg 1 spike and Spike Amount 20.0	Spike Amoun 20.0 spike duplie Matrix Result <0.482 spike duplie S	t Ra <0 cate rest Rec. 79 cate rest	Pr atrix esult 0.482 ult. Rec. Limit 70 - 1: ult.	Rec. 79 t RPI 30 0	Rec. Limit 70 - 130 RPD Limit 20
Matrix Spike (MS-1) Spike QC Batch: 95682 Prep Batch: 81075 Param GRO Percent recovery is based on the Param GRO Percent recovery is based on the	spike	F e resu C	C I Date QC I C I I It. RPD MSD Result 15.8 It. RPD M	Analyz Preparat MS Result 15.8 is based Unit: mg/K is based IS I sult F	$\frac{\text{Unit}}{\text{Img/k}}$ $\frac{\text{Unit}}{\text{Img/k}}$ $\frac{\text{S}}{\text{Dil}}$ $\frac{\text{S}}{\text{S}}$ $\frac{\text{Dil}}{\text{Img}}$ $\frac{\text{S}}{\text{S}}$	012-10-11 012-10-09 s Dil. cg 1 spike and Spike Amount 20.0 spike and	Spike Amoun 20.0 spike duplie Matrix Result <0.482 spike duplie S	t Ra <(cate rest Rec. 79 cate rest pike	Present Presen	Rec. 79 t RPI 30 0 MSD	Rec. Limit 70 - 130 RPD Limit 20 Rec.

Matrix Spike	(MS-1)	Spiked	Sample:	311457
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QC Batch:	95757	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	QC Preparation:	2012-10-15	Prepared By:	AR

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Param]	F	С	MS Result	Units	Dil.	Spike Amount		atrix	Rec		Rec.
Chloride				2600	mg/Kg	5	2500	7	6.7	101	78.	9 - 12
Percent recovery is based on t	the spike	resi	lt RPI	D is based	on the	nike and	spike dupli	cate re	sult			
receip recovery is bused on a	site opine	1000		5 10 50000	i on one i		spine dupi	cute re	ouro.			
			MSD			Spike	Matrix			ec.		RPI
Param	F	С	Result		Dil.	Amount	Result	Rec.		mit	RPD	Lim
Chloride			2730	mg/Kg	g 5	2500	76.7	106	78.9	- 121	5	20
Matrix Spike (MS-1) Sp QC Batch: 95758 Prep Batch: 81143	piked San	nple	Dat	7 te Analyze Preparat		2-10-16 2-10-15				•	zed By ared By:	
Param]	F	С	MS Result	Units	Dil.	Spike Amount	Re	atrix esult	Rec.	I	Rec.
Chloride				3440	mg/Kg	10	2500	9	941	100	78.	9 - 12
Percent recovery is based on t		C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	ReLin	ec.	RPD	RPI Limi
Chloride			3720	mg/Kg	ç 10	2500	941	111	78.9	- 121	8	20
Matrix Spike (MS-1) Sp QC Batch: 95773 Prep Batch: 81152	piked San	nple	Dat) e Analyze Preparati		2-10-17 2-10-16					zed By: red By:	
QC Batch: 95773	piked San F		Dat QC	e Analyze			Spike Amount	Mat Res			red By: R	
QC Batch: 95773 Prep Batch: 81152 Param			Dat QC	e Analyze Preparati MS Result	on: 201	2-10-16	-		ult	Prepar	red By: R Li	CW ec. mit
QC Batch: 95773 Prep Batch: 81152 Param DRO	F	2	Dat QC C I	e Analyze Preparati MS Result 229	on: 201 Units mg/Kg	2-10-16 Dil. 1	Amount 250	Rest 48	ult B	Prepar Rec.	red By: R Li	CW ec. mit - 147.2
QC Batch: 95773 Prep Batch: 81152 Param DRO	F .he spike r	resu	Dat QC I I It. RPI MSD	e Analyze Preparati MS Result 229 D is based	on: 201 Units mg/Kg on the s	2-10-16 Dil. 1 pike and s Spike	Amount 250	Rest 48	ult sult. Re	Prepar Rec. 72 c.	R Li 36.1	CW ec. mit - 147.2 RPD
QC Batch: 95773 Prep Batch: 81152	F .he spike r	2	$\begin{array}{c} \text{Dat} \\ \text{QC} \\ \\ \hline \\ \\ \hline \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ $	e Analyze Preparati MS Result 229	on: 201 Units mg/Kg on the s	2-10-16 Dil. 1 pike and s	Amount 250 pike duplic Matrix	Rest 48 cate res Rec.	ult 3 sult.	Prepar Rec. 72 c. nit	red By: R Li	

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Surrogate		IS sult	MS Res		Units		Dil.	Spike Amount		AS ec.	MSE Rec.			ec. mit
n-Tricosane	90).5	90	.0	mg/Kg	5	1	100	(90	90	78	3.3 -	131.
Matrix Spike (MS-1) Spi	ked Sa	ample	e: 31177	73										
QC Batch: 95818 Prep Batch: 81184				te Ana C Prepa	lyzed: ration:		2-10-17 2-10-17					alyzed l epared l		YG YG
Param		F	С	MS Resul	t U	nits	Dil.	Spik Amou		Mat Res		Rec.		Rec. Limit
GRO			1	23.4	mg	g/Kg	ç 1	20.0		<1.	22	117	7() - 13
Percent recovery is based on th	e spik	e res	ult. RP MSI		sed on t	the s				result				DDI
			N/SI)			Spike	Matrix			Rec.			RPI
Param	F	C			nits I	Dil.	Amount	Result	R	ec.	Limit	RPI	D	Limi
Param GRO Percent recovery is based on th	F e spik	C 1 e rest	Resu 23.6 ilt. RP	lt U mg D is ba	g/Kg sed on t	Dil. 1 the s	Amount 20.0 pike and	<1.22 spike dupl	11 icate	resul				20
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT)		1	Resu 23.6 ılt. RP R	lt U mg	g/Kg	1 the sp	20.0	<1.22 spike dup	1	18 result nt 1	70 - 13		I 70	20 Rec. Limit - 13
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spil QC Batch: 95844	e spik	ı e rest	Resu 23.6 1lt. RP R :: 31145 Dat	lt U mg D is ba MS cesult 2.03 2.13	sed on t MSD Result 2.00 2.13	1 the sj	20.0 pike and Units ng/Kg	<1.22 spike dupl Dil. A 1	11 icate Spike moun 2	18 result nt 1	70 - 13 t. MS Rec. 102 106	0 1 MSD Rec. 100	1 70 70	20 Rec. Jimit - 13 - 13
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spil QC Batch: 95844 Prep Batch: 81211	e spike	ı e rest	Resu 23.6 1lt. RP R :: 31145 Dat	lt U mg D is ba MS tesult 2.03 2.13 4 te Anal Prepar MS	sed on t MSD Result 2.00 2.13	1 the sj ; 1 2012 2012	20.0 pike and units ng/Kg ng/Kg 2-10-18	<1.22 spike dupl Dil. A 1	11 icate Spike moun 2 2	18 result nt 1	70 - 13 t. MS Rec. 102 106 Ana Pre	0 1 MSD Rec. 100 106 alyzed E pared E	I 70 70 8y:	20 Rec. 2 imit - 130 - 130 - 130 CW CW
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spil QC Batch: 95844	e spike	ı e rest	Resu 23.6 1lt. RP R : 31145 Dat QC	lt U mg D is ba MS tesult 2.03 2.13 4 te Anal Prepar MS	Kg sed on t MSD Result 2.00 2.13 yzed: ration:	1 the sp ; ; 201: 201: 201:	20.0 pike and mg/Kg ng/Kg 2-10-18 2-10-17	<1.22 spike dup Dil. A 1 1 Spike	1: icate Spike moun 2 2 M R	18 result nt 1	70 - 13 t. MS Rec. 102 106 Ana Pre	0 1 MSD Rec. 100 106	I 70 70 3y: 5y: Ra Lin	20 Rec.) - 13) - 13) - 13 CW CW CW
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spil QC Batch: 95844 Prep Batch: 81211 Param	e spike	ı e rest smple F	Resu 23.6 1lt. RP R : 31145 Dat QC C 1 lt. RP	It U: i mg D is ba MS MS 2.03 2.13 4 4 Prepar 4 Result 218	<pre>sed on t MSD Result 2.00 2.13 yzed: ration: Uni mg/I</pre>	1 the sj ; 2012 2012 ts Kg	20.0 pike and a mg/Kg ng/Kg 2-10-18 2-10-17 Dil. 1 pike and a	<1.22 spike dupl Dil. A 1 1 Spike Amount 250 spike dupl	1 icate Spike moun 2 2 M R	18 result at 1 [atrix esult 37.2 result	70 - 13 t. MS Rec. 102 106 Ana Pre Rec 72 t.	0 1 MSD Rec. 100 106	I 70 70 3y: 5y: Ra Lin	20 Rec. - imit - 130 - 130 - 130 - 130 CW CW CW cw -
GRO Percent recovery is based on th Surrogate Trifluorotoluene (TFT) 4-Bromofluorobenzene (4-BFB) Matrix Spike (MS-1) Spil QC Batch: 95844 Prep Batch: 81211 Param DRO	e spike	ı e rest smple F	Resu 23.6 1lt. RP R : 31145 QC C	It U: i mg D is ba MS desult 2.03 2.13 2.13 4 Prepad MS Result 218 D is ba	<pre>sed on t MSD Result 2.00 2.13 yzed: ration: Uni mg/J sed on t</pre>	1 the sy 2012 2012 ts Kg he sy	20.0 pike and mg/Kg ng/Kg 2-10-18 2-10-17 Dil. 1	<1.22 spike dup Dil. A 1 1 Spike Amount 250	1 icate Spike moun 2 2 M R	18 result at 1 [atrix esult 37.2 result	70 - 13 t. MS Rec. 102 106 Ana Pre Rec 72	0 1 MSD Rec. 100 106	1 70 70 3y: 3y: 8y: Ra Lin .1 -	Rec. Limit - 130 - 130 - 130 CW CW CW

Report Date: October 18, 2012 114-6401374			Work Order ergy LLC/Ba	Page Nu	mber: 22 of 28 Lea Co., NM				
matrix spikes continued	MG				(1.1)		MOD	Ð	
	MS	MSD			Spike	MS	MSD	Rec.	
Surrogate	Result	Result	Units	Dil.	Amount	Rec.	Rec.	Limit	
	MS	MSD Spike MS					MSD	Rec.	
Surrogate	Result	ult Result Units Dil. Amount Rec.						Limit	
Tricosane 92.9 86.8 mg/Kg 1 100 93							87	78.3 - 131.6	

Report Date: October 18, 2012 114-6401374

Work Order: 12101038 NMR Energy LLC/Barnhill Tank Battery Page Number: 23 of 28 Lea Co., NM

Calibration Standards

Standard (CCV-1)

QC Batch: 95681			Date Ana	alyzed: 201	Analy	zed By: YG		
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	2.00	1.97	98	80 - 120	2012-10-11
Toluene		1	mg/kg	2.00	1.97	98	80 - 120	2012-10-11
Ethylbenzene		1	mg/kg	2.00	1.88	94	80 - 120	2012-10-11
Xylene		1	mg/kg	6.00	5.93	99	80 - 120	2012-10-11

Standard (CCV-2)

QC Batch: 95681

Date Analyzed: 2012-10-11

Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1	mg/kg	2.00	1.92	96	80 - 120	2012-10-11
Toluene		1	mg/kg	2.00	1.91	96	80 - 120	2012-10-11
Ethylbenzene		1	mg/kg	2.00	1.79	90	80 - 120	2012-10-11
Xylene		1	mg/kg	6.00	5.64	94	80 - 120	2012-10-11

Standard (CCV-1)

QC Batch:	95682		Date	Analyzed:	2012-10-11		Analy	zed By: YG
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	20.0	18.6	93	80 - 120	2012-10-11

Standard (CCV-2)

QC Batch: 95682

Date Analyzed: 2012-10-11

Analyzed By: YG

114-6401374	ber 18, 20	012	NMR E		er: 12101038 Barnhill Tanl	k Battery	Page Nu	mber: 24 of 2 Lea Co., NM
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1	mg/Kg	20.0	23.5	118	80 - 120	2012-10-1
Standard (CCV-1	L)							
QC Batch: 95757			Date A	Analyzed: 2	012-10-16		Analy	zed By: AR
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Danam	Flor	Cort	Unito					Analyzad
Param Chloride Standard (CCV-2 QC Batch: 95757	Flag 2)	Cert	Units mg/Kg Date A	Conc. 100	Conc. 100	Recovery 100	Limits 85 - 115	Analyzed 2012-10-1 zed By: AR
Chloride Standard (CCV-2 QC Batch: 95757	2)		mg/Kg Date A	Conc. 100 Analyzed: 2 CCVs True	Conc. 100 012-10-16 CCVs Found	Recovery 100 CCVs Percent	Limits 85 - 115 Analy Percent Recovery	2012-10-1 zed By: AR Date
Chloride Standard (CCV-2		Cert	mg/Kg	Conc. 100 Analyzed: 2 CCVs	Conc. 100 012-10-16 CCVs	Recovery 100 CCVs	Limits 85 - 115 Analy Percent	2012-10-1 zed By: AR Date Analyzed
Chloride Standard (CCV-2 QC Batch: 95757 Param Chloride Standard (CCV-1	2) Flag		mg/Kg Date A Units mg/Kg	Conc. 100 Analyzed: 2 CCVs True Conc. 100	Conc. 100 012-10-16 CCVs Found Conc. 100	Recovery 100 CCVs Percent Recovery	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115	2012-10-1 zed By: AR Date Analyzed 2012-10-10
Chloride Standard (CCV-2 QC Batch: 95757 Param Chloride Standard (CCV-1	2) Flag		mg/Kg Date A Units mg/Kg	Conc. 100 Analyzed: 2 CCVs True Conc. 100 Analyzed: 2	Conc. 100 012-10-16 CCVs Found Conc. 100 012-10-16	Recovery 100 CCVs Percent Recovery 100	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115 Analy	2012-10-1 zed By: AR Date Analyzed 2012-10-1
Chloride Standard (CCV-2 QC Batch: 95757 Param	2) Flag		mg/Kg Date A Units mg/Kg	Conc. 100 Analyzed: 2 CCVs True Conc. 100	Conc. 100 012-10-16 CCVs Found Conc. 100	Recovery 100 CCVs Percent Recovery	Limits 85 - 115 Analy Percent Recovery Limits 85 - 115	2012-10-1 zed By: AR Date Analyzed 2012-10-10

Date Analyzed: 2012-10-16

Analyzed By: AR

QC Batch: 95758

114-6401374	October 18, 2	2012	NMR E	Work Orde Energy LLC/I	er: 12101038 Barnhill Tanl	k Battery	Page Nu	mber: 25 of 2 Lea Co., NM
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-10-10
Standard (CC	CV-1)							
QC Batch: 95	773		Date A	Analyzed: 2	012-10-17		Analyz	zed By: CW
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
				0 = 0	070	111	80 - 120	2012-10-1
DRO	CV-2)	1	mg/Kg	250	278		80 - 120	2012-10-1
DRO Standard (CC		1			012-10-17			
DRO Standard (CC		1		Analyzed: 2 CCVs		CCVs		
DRO Standard (CC QC Batch: 95	773		Date /	Analyzed: 2 CCVs True	012-10-17 CCVs Found	CCVs Percent	Analyz Percent Recovery	zed By: CW Date
DRO Standard (CC QC Batch: 95 Param		ı Cert	Date 4 Units	Analyzed: 2 CCVs True Conc.	012-10-17 CCVs Found Conc.	CCVs Percent Recovery	Analyz Percent Recovery Limits	zed By: CW Date Analyzed
DRO Standard (CC QC Batch: 95 Param DRO	773		Date /	Analyzed: 2 CCVs True	012-10-17 CCVs Found	CCVs Percent	Analyz Percent Recovery	zed By: CW Date Analyzed
DRO Standard (CC QC Batch: 95 Param	773	Cert	Date 4 Units	Analyzed: 2 CCVs True Conc.	012-10-17 CCVs Found Conc.	CCVs Percent Recovery	Analyz Percent Recovery Limits	zed By: CW Date Analyzed
DRO Standard (CC QC Batch: 95 Param	773 Flag	Cert	Date 4 Units	Analyzed: 2 CCVs True Conc.	012-10-17 CCVs Found Conc.	CCVs Percent Recovery	Analyz Percent Recovery Limits	zed By: CW
DRO Standard (CC QC Batch: 95 Param DRO Standard (CC	773 Flag	Cert	Date A Units mg/Kg	Analyzed: 2 CCVs True Conc. 250	012-10-17 CCVs Found Conc.	CCVs Percent Recovery	Analyz Percent Recovery Limits 80 - 120	zed By: CW Date Analyzed
DRO Standard (CC QC Batch: 95 Param DRO	773 Flag	Cert	Date A Units mg/Kg	Analyzed: 2 CCVs True Conc. 250 Analyzed: 2 CCVs	012-10-17 CCVs Found Conc. 233 012-10-17 CCVs	CCVs Percent Recovery 93 CCVs	Analyz Percent Recovery Limits 80 - 120 Analyz Percent	zed By: CW Date <u>Analyzed</u> 2012-10-17 zed By: CW
DRO Standard (CC QC Batch: 95 Param DRO Standard (CC QC Batch: 95'	Flag EV-3) 773	Cert 1	Date A Units mg/Kg Date A	Analyzed: 2 CCVs True Conc. 250 Analyzed: 2 CCVs True	012-10-17 CCVs Found Conc. 233 012-10-17 CCVs Found	CCVs Percent Recovery 93 CCVs Percent	Analyz Percent Recovery Limits 80 - 120 Analyz Percent Recovery	zed By: CW Date <u>Analyzed</u> 2012-10-17 zed By: CW Date
DRO Standard (CC QC Batch: 95 Param DRO Standard (CC	773 Flag	Cert	Date A Units mg/Kg	Analyzed: 2 CCVs True Conc. 250 Analyzed: 2 CCVs	012-10-17 CCVs Found Conc. 233 012-10-17 CCVs	CCVs Percent Recovery 93 CCVs	Analyz Percent Recovery Limits 80 - 120 Analyz Percent	zed By: CW Date <u>Analyzed</u> 2012-10-1 zed By: CW

Standard (CCV-4)

QC Batch: 95773

Date Analyzed: 2012-10-17

Analyzed By: CW

Report Date 114-6401374	: October 18, 2	2012	NMR E		rder: 12101038 C/Barnhill Tan	k Battery	Page Nu	mber: 26 of 28 Lea Co., NM
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO	0	1	mg/Kg	250	211	84	80 - 120	2012-10-17
Standard (CCV-1)							
QC Batch:	95818		Date	Analyzed:	2012-10-17		Analy	zed By: YG
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.948	95	80 - 120	2012-10-17
QC Batch:	95818		Date	Analyzed:	2012-10-17		Analy	zed By: YG
				CCVs	CCVs	CCVs	Percent	2
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
GRO		1	mg/Kg	1.00	0.968	97	80 - 120	2012-10-17
Standard (CCV-3)							
			Date .	Analyzed:	2012-10-17		Analy	zed By: YG
			Date .	CCVs	CCVs	CCVs	Percent	
Standard ((QC Batch:	95818			CCVs True	CCVs Found	Percent	Percent Recovery	Date
		Cert	Units mg/Kg	CCVs	CCVs		Percent	

Standard (CCV-1)

QC Batch: 95844

Date Analyzed: 2012-10-18

Analyzed By: CW

Report Date 114-6401374	: October 18, 1	2012	NMR E	Work Or Energy LLC	Page Nu	Page Number: 27 of 28 Lea Co., NM			
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyze	
DRO		1	$\mathrm{mg/Kg}$	250	257	103	80 - 120	2012-10-1	
Standard (CCV-2)								
QC Batch:	95844		Date	Analyzed:	2012-10-18		Analy	zed By: CV	
				CCVs	CCVs	CCVs	Percent		
				True	Found	Percent	Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyze	
				050	0.1 -	0 -	00 100	0010 10	
DRO		1	mg/Kg	250	217	87	80 - 120	2012-10-1	
	CCV-3)	1			217	87		2012-10 zed By: CW	
DRO Standard (O	CCV-3)	1		Analyzed:	2012-10-18		Analy		
DRO Standard (O	CCV-3)	1				CCVs Percent			
DRO Standard (O	CCV-3)	ı		Analyzed: CCVs	2012-10-18 CCVs	CCVs	Analy	zed By: CV	

Report Date: October 18, 2012 114-6401374

Work Order: 12101038 NMR Energy LLC/Barnhill Tank Battery Page Number: 28 of 28 Lea Co., NM

Appendix

Report Definitions

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	NELAP	T104704392-12-4	Midland

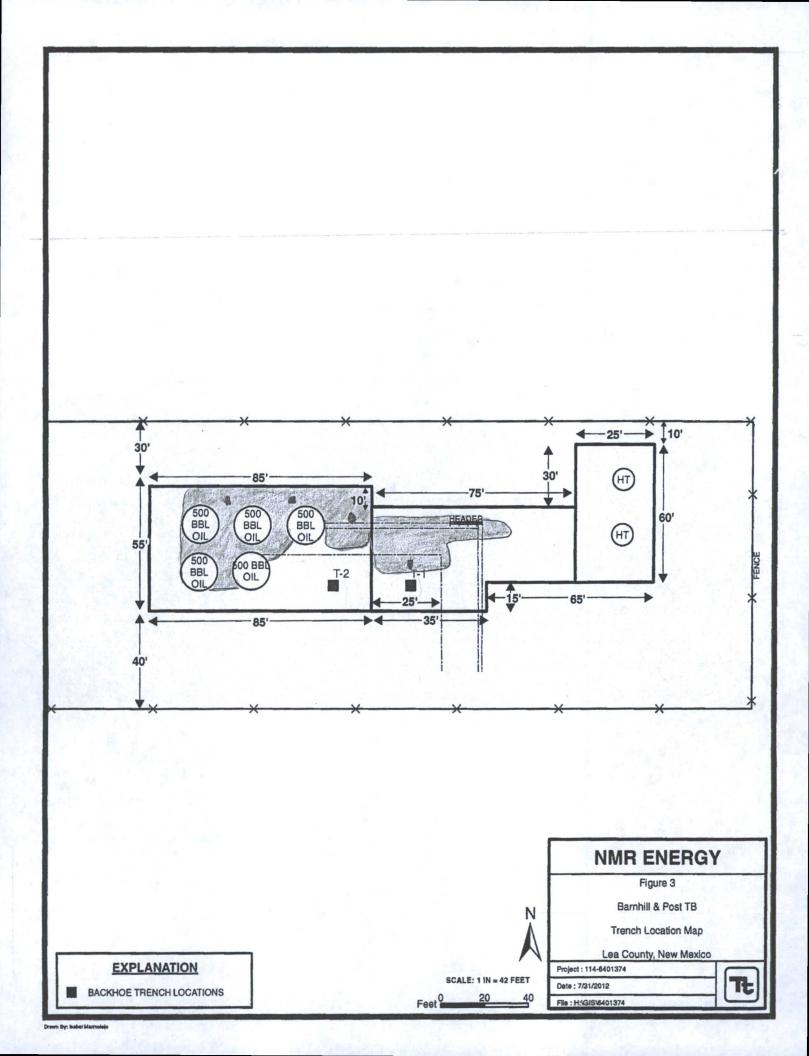
Standard Flags

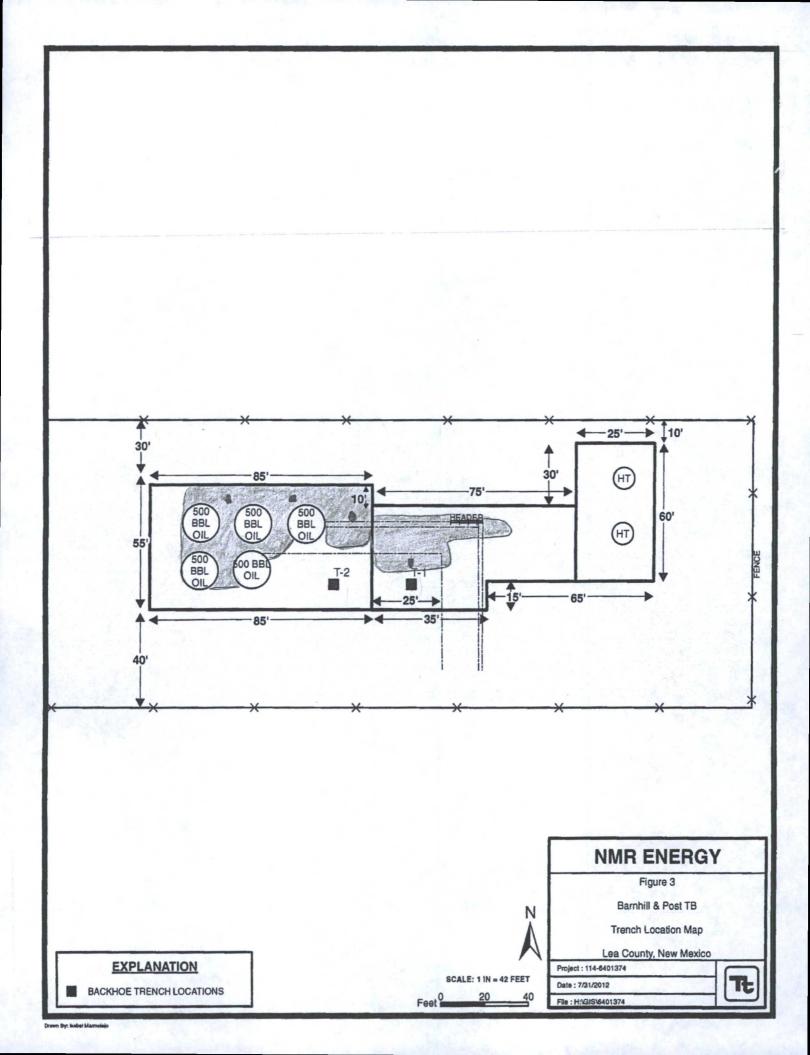
- F Description
- B Analyte detected in the corresponding method blank above the method detection limit
- H Analyzed out of hold time
- J Estimated concentration
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then ten times the concentration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

Attachments

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

PAGE: OF:	ANALYSIS REQUEST (Circle or Specify Method No.)	SQ	8 .c. Air)	PCB's 8080/ Pest. 808/66 Gamma Spe Alphe Beta PLM (Asbes PLM (Asbes Major Anion	X					~	~	×	Date: +1-4-7		OTHER:	Results by:	RUSH Charges Authorized:	
DEL .	ANALYSIS (Circle or Spec	second of the second	s Ag As Ba Cd s Ag As Ba Cd es folatiles i, Vol. 8270/625	PAH 8270 RCRP Metal TCLP Metal TCLP Volatil RCLP Volatil RCL RCMS Vol. GC.MS Vol.									SAMPLED DY: (Print & Initial)	SAMPLE SHIPPED BY: (Circle)	FEDEX BUS	1	TKE	
Custody Record		(Ext. to C35)	PRESERVATIVE METHOD	LbH €012 BLEX 80541B 80541B ИОИЕ ICE HИОЗ НИОЗ LLTLEBED (ИЛШВЕВ ОЕ	XX XX NI							IN XX	- 4	Time: 1000	1	Time:	2	
Of	5	TETRA TECH 1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	AGER: Tararez Allen lea (ova	SAMPLE IDENTIFICATION									RECEIVED BY: (Signature)	RECEIVED BY/(Bicnature)	T		RECEIVED BY: (Signature)	DATE
Regiser of Chain		HIGHAN, B Midland, 1910 N. B Midland, 1432) 682-45	PROJECT NAME PROJECT NAME: ROCALIN DALE ROLLON	XIRTAM 9NOO BARD 8ARD	5x 7-1 (0-1)	(12)1-1 ×)	(x T-1 (4")) x T-1 (5')	(1-0) Z-1 X1	(XT.2(2))	(X T-2 (4')	S X T-2 (6)	Date:	Time: 10:70-12-	1 1	Uate: Time:	ace ziP.	PHONE: REMARKS:
Analysis B			CLIENT NAME: NA SENERTRY PROJECT NO.: 1144 6 VA 13 3 4	TIME		1 19	155	usb /	457	128 /	499	40 10-9	RELINQUISHED BY: (Signature)	(INDUCTION BY (Signature)	Flance Dr. (Nigitary)	ELNOUISHED BY: (Signature)	ADDRESS: ADDRESS: STATE:	CONTACT: SAMPLE CONDITION WHEN RECEIVED:





Leking, Geoffrey R, EMNRD

From: Sent: To: Cc: Subject: Leking, Geoffrey R, EMNRD Monday, April 15, 2013 10:50 AM 'Tavarez, Ike' 'hlamb@helmsoil.com'; dbaker@tumbleweedllc.com RE: NMR Energy - Barnhill and Post TB and Post #3 Well - Sampling Data and Figures

Ike

Delineation is still needed at both sites for chlorides. Remediation for TPH at the Tank Battery and chlorides at both sites. Apparently hydrocarbons were not a significant problem?

Talk about the details tomorrow.

Thank you.

Geoffrey Leking Environmental Specialist NMOCD-Hobbs 1625 N. French Drive Hobbs, NM 88240 Office: (575) 393-6161 Ext. 113 Cell: (575) 399-2990 email: geoffreyr.leking@state.nm.us

From: Tavarez, Ike [mailto:Ike.Tavarez@tetratech.com]
Sent: Monday, April 15, 2013 9:26 AM
To: Leking, Geoffrey R, EMNRD
Cc: 'hlamb@helmsoil.com'; <u>dbaker@tumbleweedllc.com</u>
Subject: FW: NMR Energy - Barnhill and Post TB and Post #3 Well - Sampling Data and Figures

Geoffrey,

According to our last correspondence for the sites, I had sent you the data to review, but we did not get around to discussed data and remedial options for the sites.

As requested, Tetra Tech collected soil samples using a backhoe at both sites. Two (2) trenches were installed in the Barnhill and Post Tank Battery and three (3) trenches at the Post Well #3. I would like to discuss the data and proposed remediation for each site tomorrow. Let me know if you additional information, thanks

Ike Tavarez Tetra Tech

From: Tavarez, Ike Sent: Tuesday, December 04, 2012 2:47 PM To: Leking, Geoffrey R, EMNRD

Cc: 'hlamb@helmsoil.com'; Kennedy, James

Subject: NMR Energy - Barnhill and Post TB and Post #3 Well - Sampling Data and Figures

Geoffrey,

As requested, the sampling data for the above referenced sites are attached for your review. Please call me to discuss the data, so we can move forward on these sites, thanks

Ike Tavarez, PG | Senior Project Manager

Main: 432.682.4559 | Fax: 432.682.3946 | Cell: 432.425.3878

Ike.Tavarez@tetratech.com

Tetra Tech | Complex World, Clear Solutions™

1910 North Big Spring | Midland, TX 79705 | www.tetratech.com

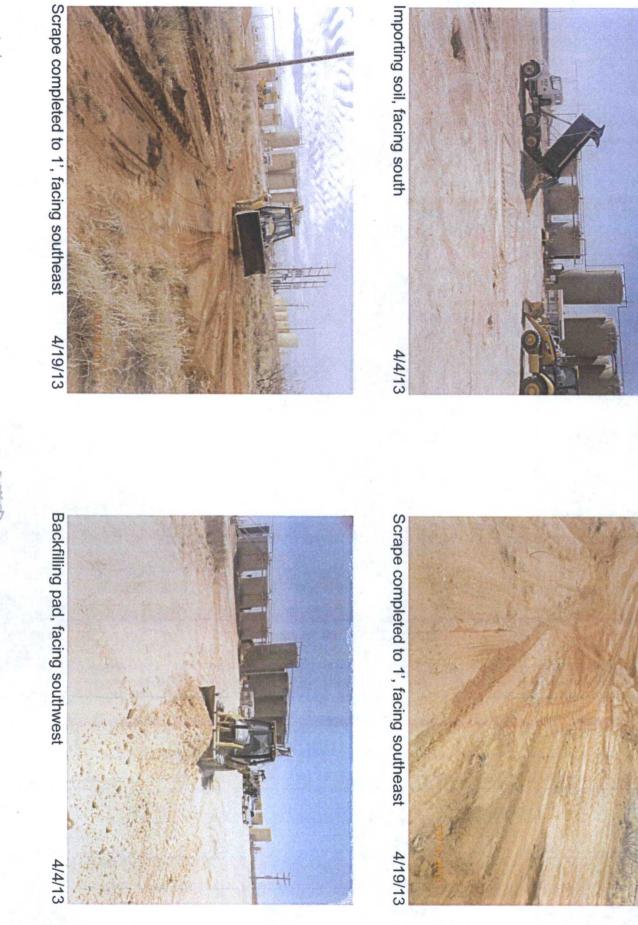
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Chronology of Events

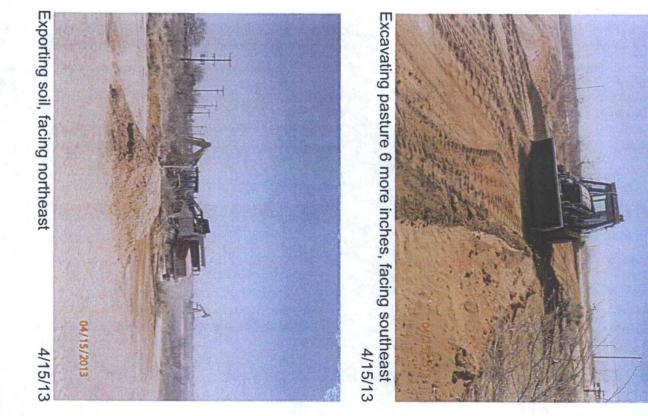
	8/24/10	Tetra Tech install backhoe trenches to define extents
	9/19/11	Tetra Tech installed boreholes to define extents
	1/27/12	Tetra Tech submitted work plan to the NMOCD
	9/20/12	Tetra Tech met with the NMOCD to review work plan. According to NMOCD the work plan had not been reviewed.
	9/28/12	Tetra Tech resubmitted (email) work plan to the NMOCD.
	10/17/12	Tetra Tech requested (email) to start the site remediation.
~	10/22/12	NMOCD response to work plan for additional delineation.
1	-4/16/12	

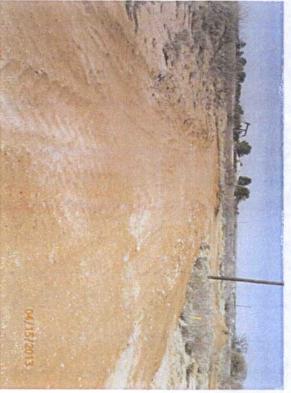
-





5/2/13 MTCA NORTH AROUA - HIST FOUND DURING RECENT SPILL RAMED





Excavation completed in north area, facing northwest 4/15/13