pKS1680394223 6

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

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 August 8, 2011

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

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company NMR ENERGY LLC	Contact HOLLIE LAMB
Address 800 BERING DR. SUITE 250	Telephone No. 432 682 1122
Facility Name POST 3	Facility Type

Surface Owner PRIVATE	Mineral Owner PRIVATE	API No. 30-025-28576

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	12	14S	37E	330	N	330	W	EDDY

Latitude 33.1252837405026

Longitude -103.161372887896

NATURE OF RELEASE

Type of Release:	Volume of Release:	Volume Recovered:
Source of Release:	Date and Hour of Occurrence: Unknown	Date and Hour of Discovery Unknown
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom?	Date and Hour	
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.*

This C-141 was requested by NMOCD personnel during a meeting on April 4th, in which it was revealed that there was historical contamination by previous operators to the site in question beyond what was furnished to us in the operator record or public record.

Cause of problem:
Unknown

Describe Area Affected and Cleanup Action Taken.*

The extent and the cleanup action is to be determined.

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature:	OIL CONSERVATION DIVISION	
Printed Name: HOLLIE LAMB	Approved by Environmental Specialist:	
Title: REGULATORY AFFAIRS COORDINATOR	Approval Date:	Expiration Date:
E-mail Address: hlamb@helmsoil.com	Conditions of Approval:	Attached ☐
Date: 04/09/2012 Phone: 432 682 1122		

TETRA TECH

pKJ1606942236

HOBBS OCD

JUL 09 2013

RECEIVED

July 9, 2013

LOOKED @ 7/10/13
COMMENTS

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

Re: REVISED- Assessment Work Plan for the NMR Energy, LLC., Post #3 Well Site, Unit D, Section 12, 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 Post #3 Well Site, Unit D, Section 12, Township 14 South, Range 37 East, Lea County, New Mexico (Site). The site coordinates are N 33.12546°, W 103.16134°. The site location is shown on Figures 1 and 2.

Background

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

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

Regulatory

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (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, ethyl-benzene 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

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 three (3) locations to assess the subsurface soils from historical impact at the well site. On October 9, 2012, Tetra Tech installed three (3) backhoe trenches (T-1, T-2 and T-3) 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, none of the samples showed a TPH concentration above the RRAL in the 1.0'. T-1 and T-3 also did not show elevated chlorides in any of the samples.

Chloride concentrations were detected in the area of T-2 at a depth of 2.0' and 4.0' below surface of 1,220 mg/Kg and 941 mg/Kg, respectively. The chlorides significantly declined with depth to 297 mg/kg at 6.0' below surface. Deeper samples could not be collected due to the dense caliche formation. The chloride impact was vertically defined.

TETRA TECH

Proposed Work Plan

As discussed during the April 16, 2013 meeting with the NMOCD, the NMOCD recommended removal of soil to approximately 4.0'-5.0' deep, in the area of T-2, to remove the elevated chloride concentrations. The areas are highlighted (green) in Table 1 and shown on Figure 3. During excavation activities, Tetra Tech personnel will collect and field screen the samples for chlorides from the excavation sidewalls to determine if additional removal is needed. Once the elevated chlorides are removed, the excavation will be backfilled with clean soil.

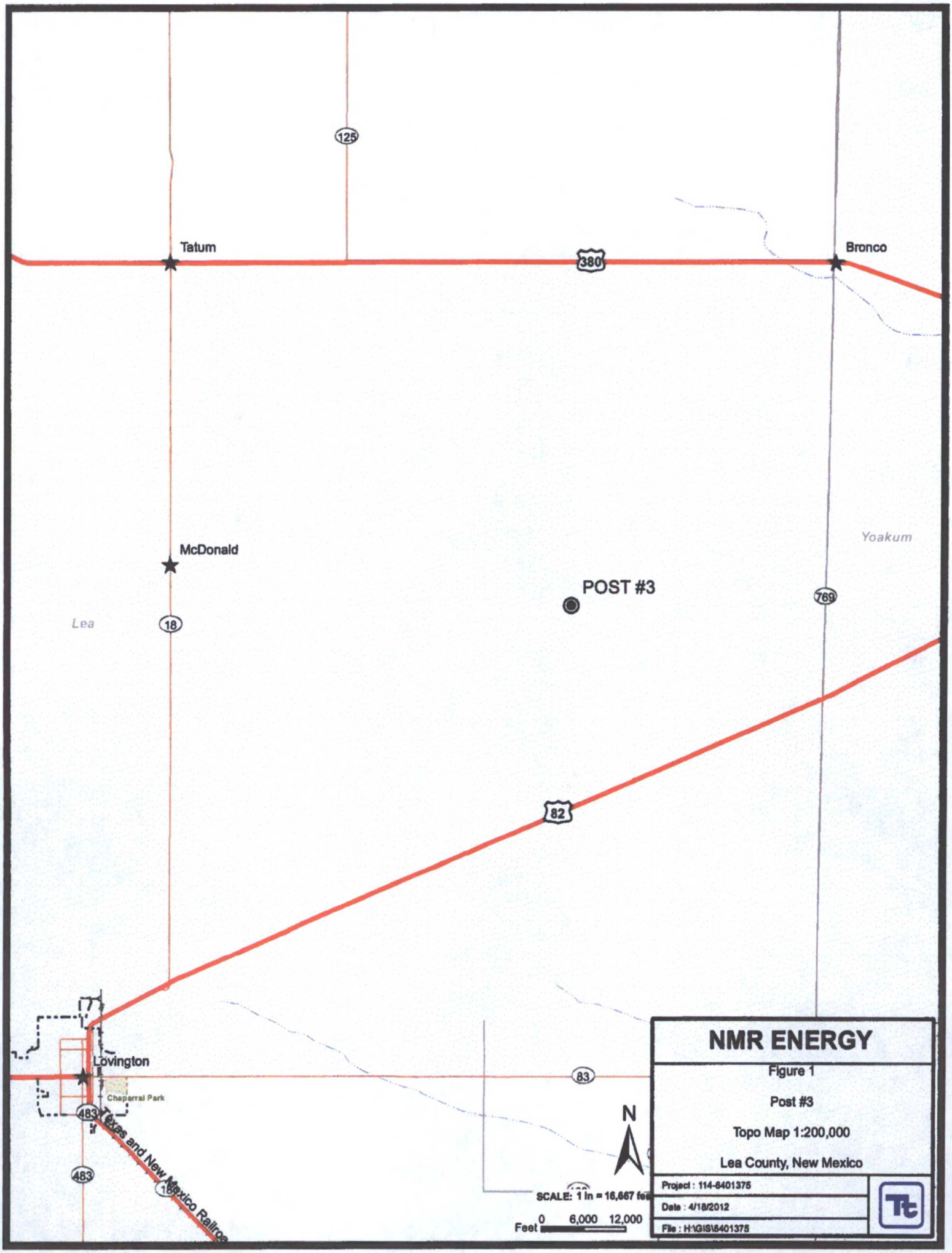
Based on site formation, the excavation depths may not be reached due to dense formations, wall cave ins and safety concerns for onsite personnel. In addition, impacted soil around oil and gas equipment, structures or lines may not be feasible or practicable to be removed due to safely concerns. As such, Tetra Tech will excavate the soils to the maximum extent practicable. The impacted soils that cannot be removed will be deferred until final abandonment.

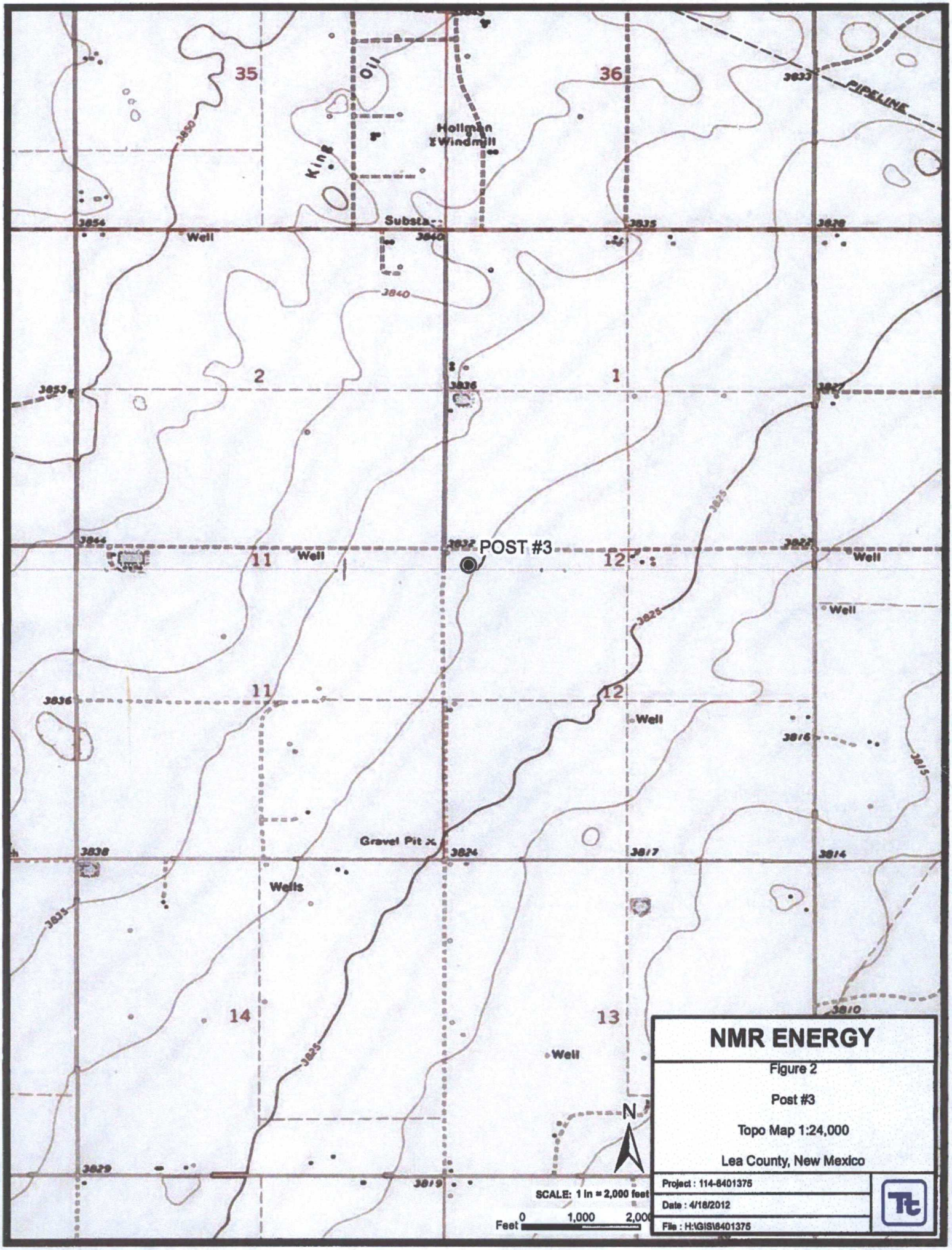
Upon completion, a final closure report will be submitted to the NMOCD. If you have any questions or comments concerning the proposed remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,
TETRA TECH

James F. Kennedy
Project Manager

cc: Hollie Lamb – Helm
Daniel Baker – Tumbleweed/NMR


125
Tatum
380
Bronco
McDonald
Yoakum
POST #3
769
Lea
18
82
Lovington
83
Chaparral Park
483
Texas and New Mexico Railroa
483
18
N
SCALE: 1 In = 16,667 fe
0 6,000 12,000
Feet
NMR ENERGY
Figure 1
Post #3
Topo Map 1:200,000
Lea County, New Mexico
Project : 114-6401375
Date : 4/18/2012
File : H:\GIS\6401375



NMR ENERGY

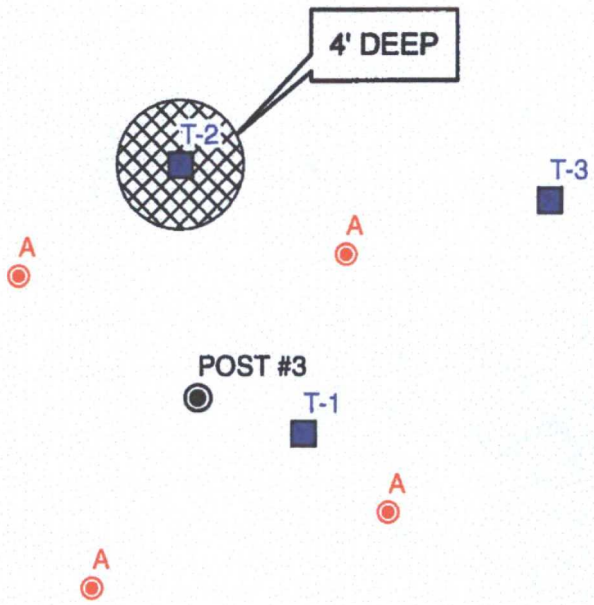
Figure 2

Post #3

Topo Map 1:24,000

Lea County, New Mexico

Project : 114-8401375	
Date : 4/18/2012	
File : H:\GIS\8401375	



CROP AREA

EXPLANATION

- WELL ANCHOR LOCATIONS
- BACKHOE TRENCH LOCATIONS
- APPROXIMATE EXCAVATION

N

SCALE: 1 IN = 66 FEET

Feet 0 20 40

NMR ENERGY

Figure 3

Post #3

Proposed Excavation Map

Lea County, New Mexico

Project : 114-6401375

Date : 7/30/2012

File : H:\GIS\6401375

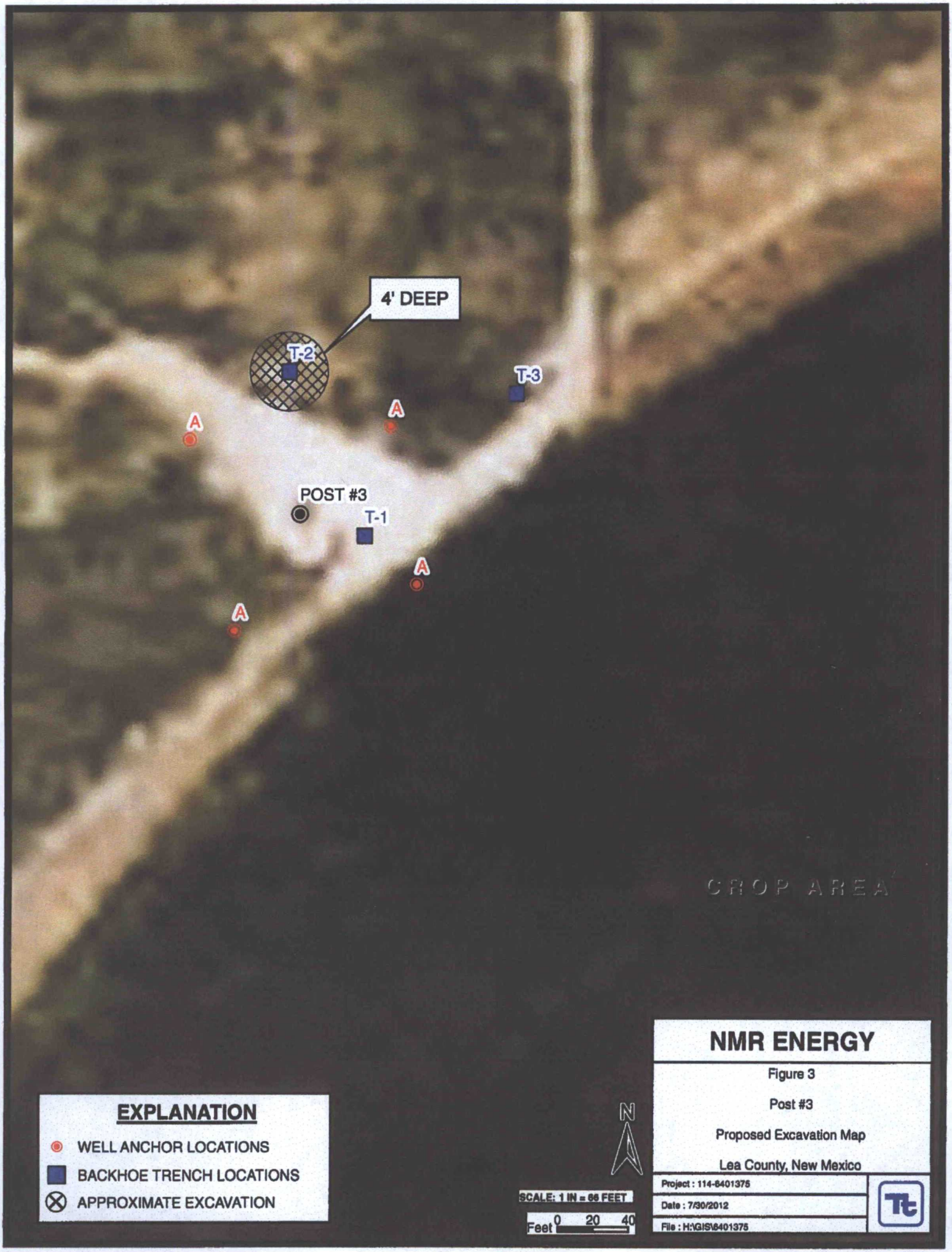

4' DEEP
T-2
T-3
A
A
POST #3
T-1
A
A
CROP AREA
EXPLANATION
WELL ANCHOR LOCATIONS
BACKHOE TRENCH LOCATIONS
APPROXIMATE EXCAVATION
N
SCALE: 1 IN = 66 FEET
Feet 0 20 40
NMR ENERGY
Figure 3
Post #3
Proposed Excavation Map
Lea County, New Mexico
Project : 114-6401375
Date : 7/30/2012
File : H:\GIS\6401375

Table 1
NMR Energy LLC
Post #3 Well
Lea County, New Mexico

Sample ID	Sample Date	Sample Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethlybenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
			In-Situ	Removed	GRO	DRO	Total						
T-1	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	33.6
	"	2	X		-	-	-	-	-	-	-	-	33.6
	"	4	X		-	-	-	-	-	-	-	-	202
	"	6	X		-	-	-	-	-	-	-	-	106
T-2	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
	"	2	X		-	-	-	-	-	-	-	-	1,220
	"	4	X		-	-	-	-	-	-	-	-	941
	"	6	X		-	-	-	-	-	-	-	-	297
T-3	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	33.5
	"	2	X		-	-	-	-	-	-	-	-	81.4
	"	4	X		-	-	-	-	-	-	-	-	<20.0

(--) Not Analyzed

Soil to be excavated

TETRA TECH

June 26, 2013

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

Re: Assessment Work Plan for the NMR Energy, LLC., Post #3 Well Site, Unit D, Section 12, Township 14 South, Range 37 East, Lea County, New Mexico.

Mr. Leking:

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TETRA TECH

Proposed Work Plan

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James F. Kennedy
Project Manager

cc: Hollie Lamb – Helm
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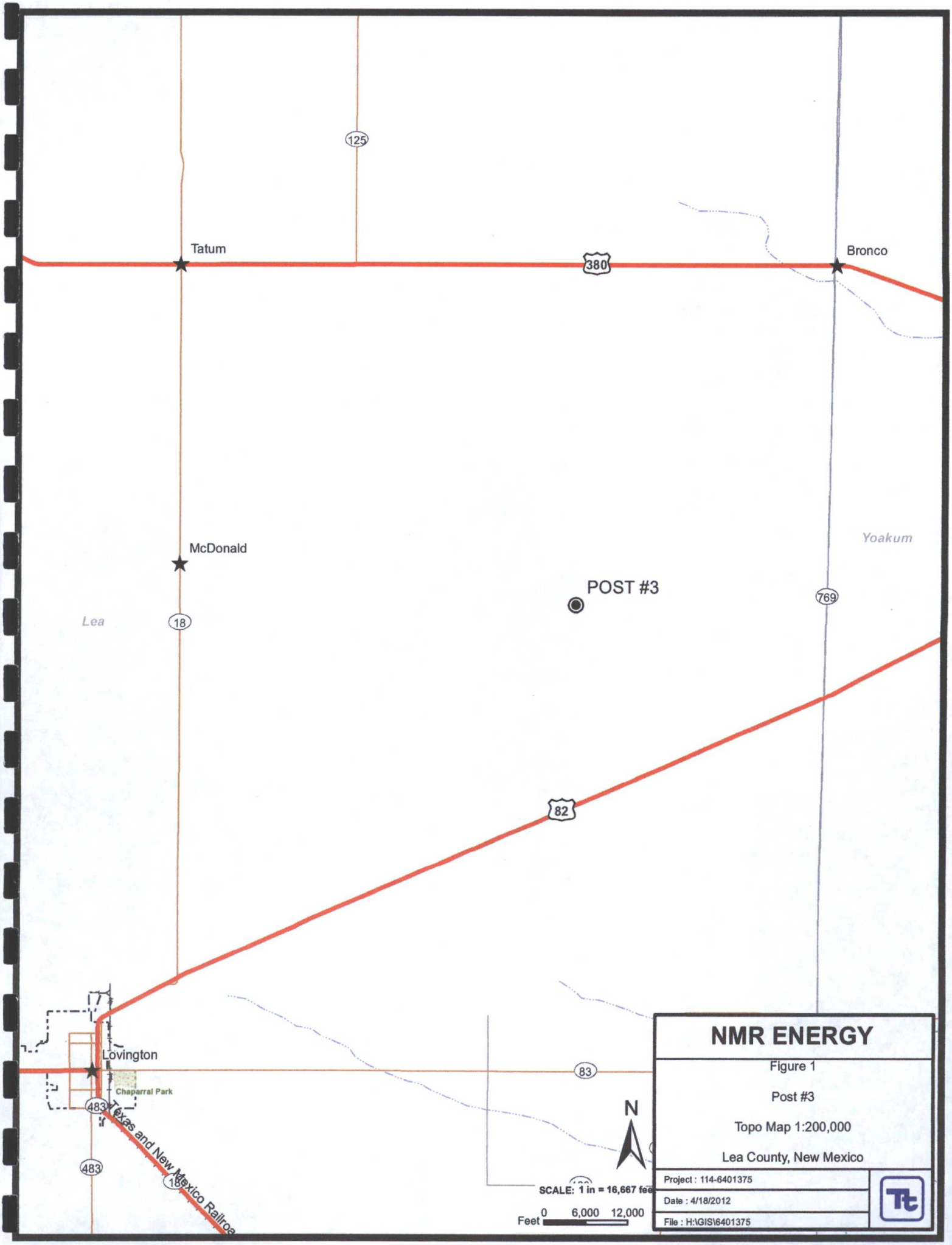


NMR ENERGY

Figure 1

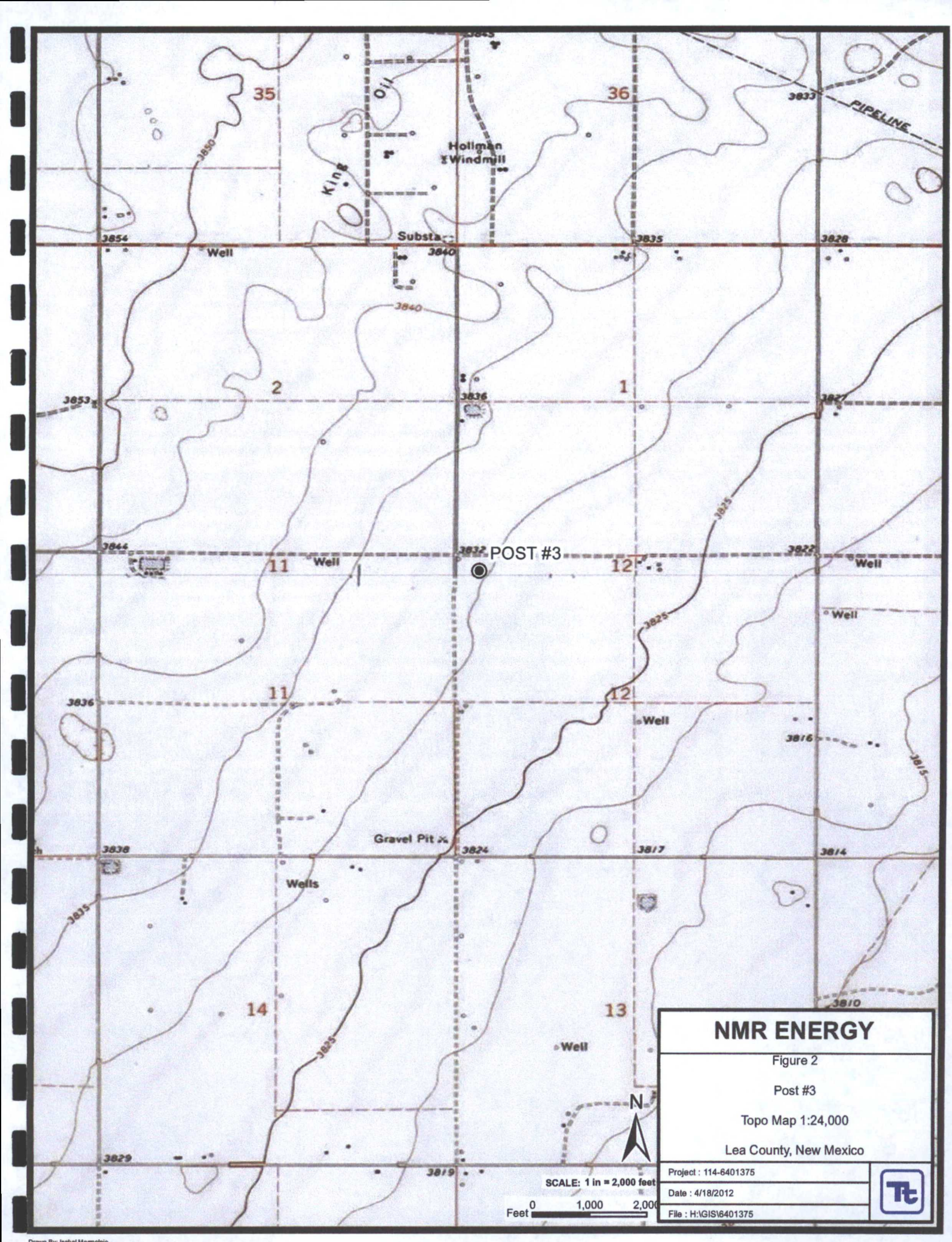
Post #3

Topo Map 1:200,000

Lea County, New Mexico

Project : 114-6401375	
Date : 4/18/2012	
File : H:\GIS\6401375	

Drawn By: Isabel Marmolejo



NMR ENERGY

Figure 2

Post #3

Topo Map 1:24,000

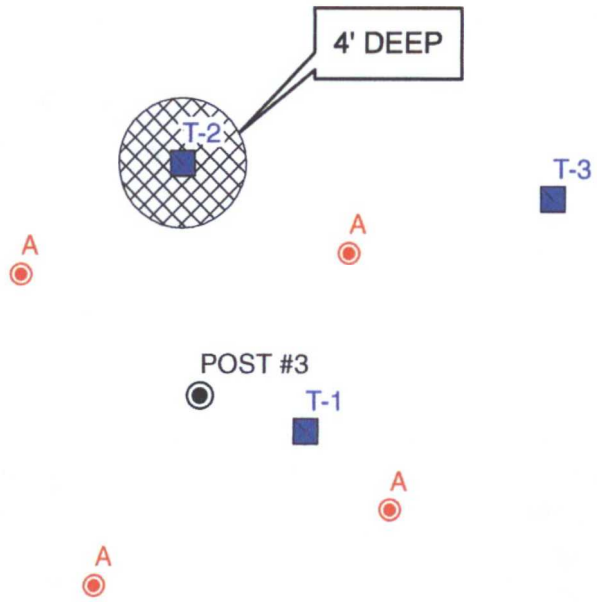
Lea County, New Mexico

Project : 114-6401375

Date : 4/18/2012

File : H:\GIS\6401375

Drawn By: Isabel Mamolejo



CROP AREA

EXPLANATION

- WELL ANCHOR LOCATIONS
- BACKHOE TRENCH LOCATIONS
- APPROXIMATE EXCAVATION

N

SCALE: 1 IN = 66 FEET

Feet 0 20 40

NMR ENERGY

Figure 3

Post #3

Proposed Excavation Map

Lea County, New Mexico

Project : 114-6401375	
Date : 7/30/2012	
File : H:\GIS\6401375	

Drawn By: Isabel Marmolejo

EXPLANATION

- WELL ANCHOR LOCATIONS
- BACKHOE TRENCH LOCATIONS
- APPROXIMATE EXCAVATION

N

SCALE: 1 IN = 66 FEET

Feet 0 20 40

NMR ENERGY

Figure 3

Post #3

Proposed Excavation Map

Lea County, New Mexico

Project : 114-6401375	
Date : 7/30/2012	
File : H:\GIS\6401375	

Drawn By: Isabel Marmolejo

Table 1
NMR Energy LLC
Post #3 Well
Lea County, New Mexico

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			In-Situ	Removed	GRO	DRO	Total						
T-1	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	33.6
	"	2	X		-	-	-	-	-	-	-	-	33.6
	"	4	X		-	-	-	-	-	-	-	-	202
	"	6	X		-	-	-	-	-	-	-	-	106
T-2	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<20.0
	"	2	X		-	-	-	-	-	-	-	-	1,220
	"	4	X		-	-	-	-	-	-	-	-	941
	"	6	X		-	-	-	-	-	-	-	-	297
T-3	10/9/2012	0-1	X		<1.00	<50.0	<50.0	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	33.5
	"	2	X		-	-	-	-	-	-	-	-	81.4
	"	4	X		-	-	-	-	-	-	-	-	<20.0

(--) Not Analyzed

Soil to be excavated

Water Well Data
Average Depth to Groundwater (ft)
NMR - Post #3 Well
Lea County, New Mexico

13 South 36 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

13 South 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 75	26 55	25 40
31	32	33	34	35 65 80	36 78 40 65

13 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 South 36 East

6 85	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 37 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

14 South 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 South 36 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

15 South 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
31	32	33	34	35	36

15 South 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

Summary Report

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

Report Date: October 17, 2012

Work Order: 12101039

Project Location: Lea Co., NM
Project Name: NMR Energy LLC/Post #3 Well
Project Number: 114-6401375

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
311461	T-1 (0-1')	soil	2012-10-09	00:00	2012-10-10
311462	T-1 (2')	soil	2012-10-09	00:00	2012-10-10
311463	T-1 (4')	soil	2012-10-09	00:00	2012-10-10
311464	T-1 (6')	soil	2012-10-09	00:00	2012-10-10
311465	T-2 (0-1')	soil	2012-10-09	00:00	2012-10-10
311466	T-2 (2')	soil	2012-10-09	00:00	2012-10-10
311467	T-2 (4')	soil	2012-10-09	00:00	2012-10-10
311468	T-2 (6')	soil	2012-10-09	00:00	2012-10-10
311469	T-3 (0-1')	soil	2012-10-09	00:00	2012-10-10
311470	T-3 (2')	soil	2012-10-09	00:00	2012-10-10
311471	T-3 (4')	soil	2012-10-09	00:00	2012-10-10

	BTEX				TPH DRO - NEW	TPH GRO
Sample - Field Code	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
311461 - T-1 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<1.00
311465 - T-2 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<1.00
311469 - T-3 (0-1')	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	<1.00

Sample: 311461 - T-1 (0-1')

Param	Flag	Result	Units	RL
Chloride		**33.6**	mg/Kg	4

Sample: 311462 - T-1 (2')

Param	Flag	Result	Units	RL
Chloride		**33.6**	mg/Kg	4

Sample: 311463 - T-1 (4')

Param	Flag	Result	Units	RL
Chloride		**202**	mg/Kg	4

Sample: 311464 - T-1 (6')

Param	Flag	Result	Units	RL
Chloride		**106**	mg/Kg	4

Sample: 311465 - T-2 (0-1')

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

Sample: 311466 - T-2 (2')

Param	Flag	Result	Units	RL
Chloride		**1220**	mg/Kg	4

Sample: 311467 - T-2 (4')

Param	Flag	Result	Units	RL
Chloride		**941**	mg/Kg	4

Sample: 311468 - T-2 (6')

Param	Flag	Result	Units	RL
Chloride		**297**	mg/Kg	4

Sample: 311469 - T-3 (0-1')

Param	Flag	Result	Units	RL
Chloride		**33.5**	mg/Kg	4

Sample: 311470 - T-3 (2')

Param	Flag	Result	Units	RL
Chloride		**81.4**	mg/Kg	4

Sample: 311471 - T-3 (4')

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4

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 915-585-3443 FAX 915-585-4944
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750
E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

Analytical and Quality Control Report

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

Report Date: October 17, 2012

Work Order: 12101039

Project Location: Lea Co., NM
Project Name: NMR Energy LLC/Post #3 Well
Project Number: 114-6401375

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
311461	T-1 (0-1')	soil	2012-10-09	00:00	2012-10-10
311462	T-1 (2')	soil	2012-10-09	00:00	2012-10-10
311463	T-1 (4')	soil	2012-10-09	00:00	2012-10-10
311464	T-1 (6')	soil	2012-10-09	00:00	2012-10-10
311465	T-2 (0-1')	soil	2012-10-09	00:00	2012-10-10
311466	T-2 (2')	soil	2012-10-09	00:00	2012-10-10
311467	T-2 (4')	soil	2012-10-09	00:00	2012-10-10
311468	T-2 (6')	soil	2012-10-09	00:00	2012-10-10
311469	T-3 (0-1')	soil	2012-10-09	00:00	2012-10-10
311470	T-3 (2')	soil	2012-10-09	00:00	2012-10-10
311471	T-3 (4')	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.

Michael Abel

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

Report Contents

Case Narrative

Samples for project NMR Energy LLC/Post #3 Well were received by TraceAnalysis, Inc. on 2012-10-10 and assigned to work order 12101039. Samples for work order 12101039 were received intact at a temperature of -0.6 C.

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

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	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	95758	2012-10-16 at 16:14
Chloride (Titration)	SM 4500-Cl B	81143	2012-10-15 at 12:12	95759	2012-10-16 at 16:15
TPH DRO - NEW	S 8015 D	81152	2012-10-16 at 08:00	95773	2012-10-17 at 08:28
TPH GRO	S 8015 D	81075	2012-10-09 at 14:39	95682	2012-10-11 at 14:39

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 12101039 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: 311461 - T-1 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	95681	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.95	mg/Kg	1	2.00	98	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 311461 - T-1 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**33.6**	mg/Kg	5	4.00

Sample: 311461 - T-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	95773	Date Analyzed:	2012-10-17	Analyzed By:	CW
Prep Batch:	81152	Sample Preparation:	2012-10-16	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			93.8	mg/Kg	1	100	94	55.1 - 135.7

Sample: 311461 - T-1 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	95682	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<1.00	mg/Kg	1	1.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.21	mg/Kg	1	2.00	110	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Sample: 311462 - T-1 (2')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**33.6**	mg/Kg	5	4.00

Sample: 311463 - T-1 (4')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

continued ...

sample 311463 continued ...

Parameter	Flag	Cert	RL Result	Units	Dilution	RL

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**202**	mg/Kg	5	4.00

Sample: 311464 - T-1 (6')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**106**	mg/Kg	5	4.00

Sample: 311465 - T-2 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	95681	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.94	mg/Kg	1	2.00	97	70 - 130
4-Bromofluorobenzene (4-BFB)			1.94	mg/Kg	1	2.00	97	70 - 130

Sample: 311465 - T-2 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	U		<20.0	mg/Kg	5	4.00

Sample: 311465 - T-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	95773	Date Analyzed:	2012-10-17	Analyzed By:	CW
Prep Batch:	81152	Sample Preparation:	2012-10-16	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			90.8	mg/Kg	1	100	91	55.1 - 135.7

Sample: 311465 - T-2 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	95682	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<1.00	mg/Kg	1	1.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			2.23	mg/Kg	1	2.00	112	70 - 130
4-Bromofluorobenzene (4-BFB)			1.81	mg/Kg	1	2.00	90	70 - 130

Sample: 311466 - T-2 (2')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**1220**	mg/Kg	10	4.00

Sample: 311467 - T-2 (4')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95758	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**941**	mg/Kg	10	4.00

Sample: 311468 - T-2 (6')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95759	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	Result	RL Units	Dilution	RL
Chloride			**297**	mg/Kg	5	4.00

Sample: 311469 - T-3 (0-1')

Laboratory:	Midland				
Analysis:	BTEX	Analytical Method:	S 8021B	Prep Method:	S 5035
QC Batch:	95681	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1	<0.0200	mg/Kg	1	0.0200
Toluene	U	1	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1	<0.0200	mg/Kg	1	0.0200
Xylene	U	1	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)			1.92	mg/Kg	1	2.00	96	70 - 130
4-Bromofluorobenzene (4-BFB)			1.92	mg/Kg	1	2.00	96	70 - 130

Sample: 311469 - T-3 (0-1')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95759	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**33.5**	mg/Kg	5	4.00

Sample: 311469 - T-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH DRO - NEW	Analytical Method:	S 8015 D	Prep Method:	N/A
QC Batch:	95773	Date Analyzed:	2012-10-17	Analyzed By:	CW
Prep Batch:	81152	Sample Preparation:	2012-10-16	Prepared By:	CW

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

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			99.5	mg/Kg	1	100	100	55.1 - 135.7

Sample: 311469 - T-3 (0-1')

Laboratory:	Midland				
Analysis:	TPH GRO	Analytical Method:	S 8015 D	Prep Method:	S 5035
QC Batch:	95682	Date Analyzed:	2012-10-11	Analyzed By:	YG
Prep Batch:	81075	Sample Preparation:	2012-10-09	Prepared By:	YG

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1	<1.00	mg/Kg	1	1.00

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)			1.79	mg/Kg	1	2.00	90	70 - 130

Sample: 311470 - T-3 (2')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95759	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			**81.4**	mg/Kg	5	4.00

Sample: 311471 - T-3 (4')

Laboratory:	Midland				
Analysis:	Chloride (Titration)	Analytical Method:	SM 4500-Cl B	Prep Method:	N/A
QC Batch:	95759	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	Sample Preparation:	2012-10-15	Prepared By:	AR

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride			<20.0	mg/Kg	5	4.00

Method Blanks

Method Blank (1) QC Batch: 95681

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

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1	<0.00100	mg/Kg	0.02
Toluene		1	<0.00100	mg/Kg	0.02
Ethylbenzene		1	<0.00110	mg/Kg	0.02
Xylene		1	<0.00360	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	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 | Date Analyzed: 2012-10-11 | Analyzed By: YG
Prep Batch: 81075 | QC Preparation: 2012-10-09 | Prepared 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 Blank (1) QC Batch: 95758

QC Batch: 95758 | Date Analyzed: 2012-10-16 | Analyzed By: AR
Prep Batch: 81143 | QC Preparation: 2012-10-15 | Prepared By: AR

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

Method Blank (1) QC Batch: 95759

QC Batch:	95759	Date Analyzed:	2012-10-16	Analyzed By:	AR
Prep Batch:	81143	QC Preparation:	2012-10-15	Prepared By:	AR

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

Method Blank (1) QC Batch: 95773

QC Batch:	95773	Date Analyzed:	2012-10-17	Analyzed By:	CW
Prep Batch:	81152	QC Preparation:	2012-10-16	Prepared By:	CW

Parameter	Flag	Cert	MDL Result	Units	RL
DRO		1	<15.7	mg/Kg	50

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane			89.1	mg/Kg	1	100	89	61.6 - 141.2

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

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	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		1	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.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	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.

Surrogate	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD 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 | Date Analyzed: 2012-10-11 | Analyzed By: YG
Prep Batch: 81075 | QC Preparation: 2012-10-09 | Prepared By: YG

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	17.7	mg/Kg	1	20.0	<0.482	88	70 - 130

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	17.4	mg/Kg	1	20.0	<0.482	87	70 - 130	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)	2.05	2.09	mg/Kg	1	2.00	102	104	70 - 130
4-Bromofluorobenzene (4-BFB)	1.94	1.88	mg/Kg	1	2.00	97	94	70 - 130

Laboratory Control Spike (LCS-1)

QC Batch: 95758 | Date Analyzed: 2012-10-16 | Analyzed By: AR
Prep Batch: 81143 | QC Preparation: 2012-10-15 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2570	mg/Kg	1	2500	<3.85	103	85 - 115

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	1	2500	<3.85	107	85 - 115	4	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: 95759 | Date Analyzed: 2012-10-16 | Analyzed By: AR
Prep Batch: 81143 | QC Preparation: 2012-10-15 | Prepared By: AR

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2760	mg/Kg	1	2500	<3.85	110	85 - 115

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

continued ...

control spikes continued ...

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2670	mg/Kg	1	2500	<3.85	107	85 - 115	3	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: 95773 | Date Analyzed: 2012-10-17 | Analyzed By: CW
Prep Batch: 81152 | QC Preparation: 2012-10-16 | Prepared By: CW

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	183	mg/Kg	1	250	<15.7	73	66.9 - 119.9

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

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	171	mg/Kg	1	250	<15.7	68	66.9 - 119.9	7	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-Tricosane	86.2	79.3	mg/Kg	1	100	86	79	76.8 - 140.2

Matrix Spike (MS-1) Spiked Sample: 311465

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

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

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1	2.34	mg/Kg	1	2.00	<0.00100	117	70 - 130	1	20
Toluene		1	2.35	mg/Kg	1	2.00	<0.00100	118	70 - 130	1	20
Ethylbenzene		1	2.30	mg/Kg	1	2.00	<0.00110	115	70 - 130	2	20
Xylene		1	7.24	mg/Kg	1	6.00	<0.00360	121	70 - 130	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
Trifluorotoluene (TFT)	1.95	1.94	mg/Kg	1	2	98	97	70 - 130
4-Bromofluorobenzene (4-BFB)	1.95	1.93	mg/Kg	1	2	98	96	70 - 130

Matrix Spike (MS-1) Spiked Sample: 311465

QC Batch: 95682 | Date Analyzed: 2012-10-11 | Analyzed By: YG
Prep Batch: 81075 | QC Preparation: 2012-10-09 | Prepared By: YG

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1	15.8	mg/Kg	1	20.0	<0.482	79	70 - 130

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1	15.8	mg/Kg	1	20.0	<0.482	79	70 - 130	0	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	1.77	1.80	mg/Kg	1	2	88	90	70 - 130
4-Bromofluorobenzene (4-BFB)	1.87	1.85	mg/Kg	1	2	94	92	70 - 130

Matrix Spike (MS-1) Spiked Sample: 311467

QC Batch: 95758 | Date Analyzed: 2012-10-16 | Analyzed By: AR
Prep Batch: 81143 | QC Preparation: 2012-10-15 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			3440	mg/Kg	10	2500	941	100	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			3720	mg/Kg	10	2500	941	111	78.9 - 121	8	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: 311477

QC Batch: 95759 | Date Analyzed: 2012-10-16 | Analyzed By: AR
Prep Batch: 81143 | QC Preparation: 2012-10-15 | Prepared By: AR

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			8750	mg/Kg	10	2500	6520	89	78.9 - 121

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			8960	mg/Kg	10	2500	6520	98	78.9 - 121	2	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: 311450

QC Batch: 95773 | Date Analyzed: 2012-10-17 | Analyzed By: CW
Prep Batch: 81152 | QC Preparation: 2012-10-16 | Prepared By: CW

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
DRO		1	229	mg/Kg	1	250	48	72	36.1 - 147.2

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

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
DRO		1	238	mg/Kg	1	250	48	76	36.1 - 147.2	4	20

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

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
n-Tricosane	90.5	90.0	mg/Kg	1	100	90	90	78.3 - 131.6

Calibration Standards

Standard (CCV-1)

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	1.97	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 | Analyzed By: YG

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date 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

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	2012-10-11

Standard (CCV-1)

QC Batch: 95758 Date Analyzed: 2012-10-16 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	100	100	85 - 115	2012-10-16

Standard (CCV-2)

QC Batch: 95758 Date Analyzed: 2012-10-16 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.8	100	85 - 115	2012-10-16

Standard (CCV-1)

QC Batch: 95759 Date Analyzed: 2012-10-16 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2012-10-16

Standard (CCV-2)

QC Batch: 95759 Date Analyzed: 2012-10-16 Analyzed By: AR

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.5	100	85 - 115	2012-10-16

Standard (CCV-1)

QC Batch: 95773 Date Analyzed: 2012-10-17 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	278	111	80 - 120	2012-10-17

Standard (CCV-2)

QC Batch: 95773 Date Analyzed: 2012-10-17 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	233	93	80 - 120	2012-10-17

Standard (CCV-3)

QC Batch: 95773 Date Analyzed: 2012-10-17 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	209	84	80 - 120	2012-10-17

Standard (CCV-4)

QC Batch: 95773 Date Analyzed: 2012-10-17 Analyzed By: CW

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
DRO		1	mg/Kg	250	211	84	80 - 120	2012-10-17

Appendix

Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory 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.

2101039

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: NMR Energy LLC

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6401375

PROJECT NAME: Post #3 well Lea Co NM

ANALYSIS REQUEST (Circle or Specify Method No.)

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD / TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
31461	10-9		S	X		T-1 (0-1')	1	N			X	X	X	X											X				
462					X	T-1 (2')																							
463					X	T-1 (4')																							
464					X	T-1 (6')																							
465				X		T-2 (0-1')							X	X															
466					X	T-2 (2')																							
467					X	T-2 (4')																							
468					X	T-2 (6')																							
469				X		T-3 (0-1')							X	X															
470	10-9		S		X	T-3 (2')	1	N			X	X													X				

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Jeanne Fitch Date: 10-10-12 Time: 1000

SAMPLED BY: (Print & Initial) James Date: 10-9-12 Time:

RELINQUISHED BY: (Signature) Jeanne Fitch Date: 10-10-12 Time: 1335

RECEIVED BY: (Signature) Hernandez Date: 10-10-12 Time: 13:35

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

AIRBILL #:

OTHER:

RELINQUISHED BY: (Signature) Date: Time:

RECEIVED BY: (Signature) Date: Time:

TETRA TECH CONTACT PERSON: Ike Tavarez

Results by:

RUSH Charges Authorized: Yes No

RECEIVING LABORATORY: Trace

ADDRESS:

CITY: Midland STATE: ZIP:

CONTACT: PHONE: DATE: TIME:

RECEIVED BY: (Signature)

SAMPLE CONDITION WHEN RECEIVED: -0.6 intact AH

REMARKS: If Benzene > 10 mg/kg OR Total BTEX > 50 mg/kg Run deeper Sample, If TPH > 1,000 mg/kg Run deeper Sample

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: NMR Energy LLC

SITE MANAGER: Ike Tavarez

PROJECT NO.: 114-6461375

PROJECT NAME: Post #3 Well Lea Co NM

LAB I.D. NUMBER	DATE 2012	TIME	MATRIX	COMP.	GRAB	SAMPLE IDENTIFICATION	NUMBER OF CONTAINERS	FILTERED (Y/N)	PRESERVATIVE METHOD: HCL	HNO3	ICE	NONE	BTEX 8021B	TPH 8015 MOD. TX1005 (Ext. to C35)	PAH 8270	RCRA Metals Ag As Ba Cd Cr Pb Hg Se	TCLP Metals Ag As Ba Cd Vr Pd Hg Se	TCLP Volatiles	TCLP Semi Volatiles	RCI	GC.MS Vol. 8240/8260/624	GC.MS Semi. Vol. 8270/625	PCB's 8080/608	Pest. 808/608	Chloride	Gamma Spec.	Alpha Beta (Air)	PLM (Asbestos)	Major Anions/Cations, pH, TDS
471	10-9		S		X	T-3 (4')	1	N			X	X												X				

ANALYSIS REQUEST (Circle or Specify Method No.)

RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature) Jaime Fitch	Date: 10-10-12 Time: 1000
RELINQUISHED BY: (Signature) Jaime Fitch	Date: 10-10-12 Time: 1335	RECEIVED BY: (Signature) A Hernandez	Date: 10-10-12 Time: 13:35
RELINQUISHED BY: (Signature)	Date: / Time:	RECEIVED BY: (Signature)	Date: / Time:

SAMPLED BY: (Print & Initial) James — Date: / Time: 10-9-12

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

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

TETRA TECH CONTACT PERSON: IKE Tavarez

Results by:

RUSH Charges Authorized: Yes No

SAMPLE CONDITION WHEN RECEIVED: AH

REMARKS: See Notes on COC #1

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