Bratcher, Mike, EMNRD

From: Dorey, Kim [Kim.Dorey@tetratech.com]
Sent: Tuesday, February 14, 2012 2:43 PM
To: Bratcher, Mike, EMNRD
Cc: Tavarez, Ike
Subject: Alamo - Berry A #33
Attachments: berry_a_work_plan_sg.pdf

Mr. Bratcher,
Attached I have included a signed PDF copy of the work plan on behalf of Alamo Permian Resources for the Berry A #33. If possible Alamo would like to begin excavating the site this week or first part of next week (2/20/12).

If you have any questions or concerns, please let either Ike or myself know. Thank you

Kim Dorey | **Staff II Geologist**
Cell. 432 631 0348 | Office: 432.682 4559 | Fax: 432.682 3946
kim.dorey@tetratech.com

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

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SITE INFORMATION 2RP-881 & 891

Report Type: Work Plan

General Site Information:						
Site:	Berry A #33					
Company:	Alamo Permian Resources LLC					
Section, Township and Range	Unit K	Sec. 24	T-17-S	R-27-E		
Lease Number:	API 30-015-25154					
County:	Eddy County					
GPS:	32.81698° N			104.23447° W		
Surface Owner:	Federal					
Mineral Owner:						
Directions:	From NM-82 and Hwy 360, travel west 4.5 miles to Crane Road. Turn right 0.1 miles to Southern Union, Turn right 0.1 to location on right .					
	2RP-881			2RP-891		

Release Data:	Spill #1	Spill #2
Date Released:	7/14/11	8/30/11
Type Release:	Oil and Water	Water
Source of Contamination:	Open Top ran over	Open Top ran over
Fluid Released:	18 bbls (3 bbls oil, 15 bbls water)	25 bbls
Fluids Recovered:	0 bbls	0 bbls

Official Communication:		
Name:	Hollie Lamb	Kim Dorey
Company:	Alamo Permian Resources, LLC	Tetra Tech
Address:	415 West Wall St., Suite 500	1910 N. Big Spring
P.O. Box		
City:	Midland, Texas	Midland, Texas
Phone number:	(432) 897-0673	(432) 682-4559
Cell:	(432) 664-7659	
Email:	hlamb@helmsoil.com	kim.dorey@tetratech.com

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

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

TETRA TECH

February 14, 2012

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

Re: Work Plan for the Alamo Permian Resources LLC., Berry A #33, Unit K, Section 24, Township 17 South, Range 27 East, Eddy County, New Mexico.

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by Alamo Permian Resources LLC., (Alamo) to assess a spill from the Berry A #33, Unit K, Section 24, Township 17 South, Range 27 East, Eddy County, New Mexico (Site). The spill site coordinates are N 32.81698°, W 104.23447°. The site location is shown on Figures 1 and 2. Alamo reported two separate reportable spills at the Berry A #33 location.

Background

Spill #1

According to the State of New Mexico C-141 Initial Report, the first spill was discovered on July 14, 2011, and released approximately three (3) barrels of oil and fifteen (15) barrel of produced water due to an electrical malfunction preventing the injection pump from operating and allowing the open top tank to overflow.

Spill #2

According to the State of New Mexico C-141 Initial Report, the second spill was discovered on August 30, 2011, and released approximately twenty-five (25) barrels of water due to an electrical malfunction preventing the injection pump from operating and allowing the open top tank to overflow.

Groundwater

No water wells were listed within Section 24. According to the New Mexico office of State Engineer one well was listed in Section 23 with a reported total depth of 220' and groundwater depth of 40' bgs which may be artesian.

According to the NMOCD groundwater map, the average depth to groundwater in this area is approximately 150' below surface. One well in Section 16 of Township 17 South, Range 27 East has a recorded depth to water of 172' below surface. Another well was listed in Section 19 of Township 17 South, Range 28 East, has a recorded depth to water of 191' below surface. The groundwater well report data and New Mexico Office of the State Engineer's reports are 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 (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

Soil Assessment and Analytical Results

On January 23, 2012, Tetra Tech personnel supervised the installation of boreholes utilizing an air rotary drilling rig. A total of six (6) boreholes (BH-1 through BH-6) were installed and soil samples collected for laboratory analysis. Select samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of laboratory analysis and chain-of-custody documentation are included in Appendix C. The results of the sampling are summarized in Table 1. The spill footprint and borehole locations are shown on Figure 3.

Referring to Table 1, all submitted samples were below the RRAL for TPH and BTEX. Elevated chloride concentrations were detected in BH-1, BH-2, and BH-4. BH-1 located inside the berm area had chloride concentrations ranging from 1,010 mg/kg at 6-7' bgs to 14,200 mg/kg at 14-15' bgs. Chloride concentrations had a significant decrease to 1,480 mg/kg at 29-30' bgs and declined to <200 mg/kg at 39-40' bgs.

TETRA TECH

BH-2 and BH-4 were installed outside of the berm area on the east and west side respectively. BH-2, west of berm area had chloride concentrations ranging from 2,800 mg/kg at 9-10' bgs to 15,100 mg/kg at 0-1' bgs. BH-2 was vertically defined with a chloride concentration of 291 mg/kg at 24-25' bgs. BH-4, east of berm had chloride concentrations ranging from 771 mg/kg at 6-7' bgs to 12,200 mg/kg at 14-15' bgs. BH-4 was vertically defined with a chloride concentration of 256 mg/kg at 39-40' bgs.

At BH-3 a chloride concentration spike was detected at 6-7' bgs of 3,050 mg/kg. Samples above at 4-5' (482 mg/kg) and below at 9-10' (386 mg/kg) did not show a significant impact. The detected chloride spike does not appear to be an environmental concern.

Work Plan

Alamo proposes the removal of impacted material in the areas of BH-1, BH-2, and BH-4 as shown on Table 1 highlighted in green and as shown on Figure 4. The areas outside of the berm, BH-2 and BH-4, will be excavated to a depth of approximately 14-15' bgs. The area inside the berm near BH-1 will be excavated to a depth of approximately 19-20' bgs. The existing open top tank and equipment inside the berm area will be removed for the excavation. The facility will be rebuilt and lined at the site. The excavated soil will be transported to proper disposal. Once completed, the site will be backfilled with clean material. The proposed

Due to the potential limited access, the proposed excavation depths may not be reached due to wall cave ins and safety concern for onsite personnel and equipment. As such, Tetra Tech will excavate the soils to the maximum extent practicable. In addition, due to unforeseen geological features (very dense dolomitic limestone) proposed depths may not be reached. If deeper excavation is not achievable, the impacted area will be capped with a 40 mil liner at 4.0' below surface and backfilled with clean material to surface grade.

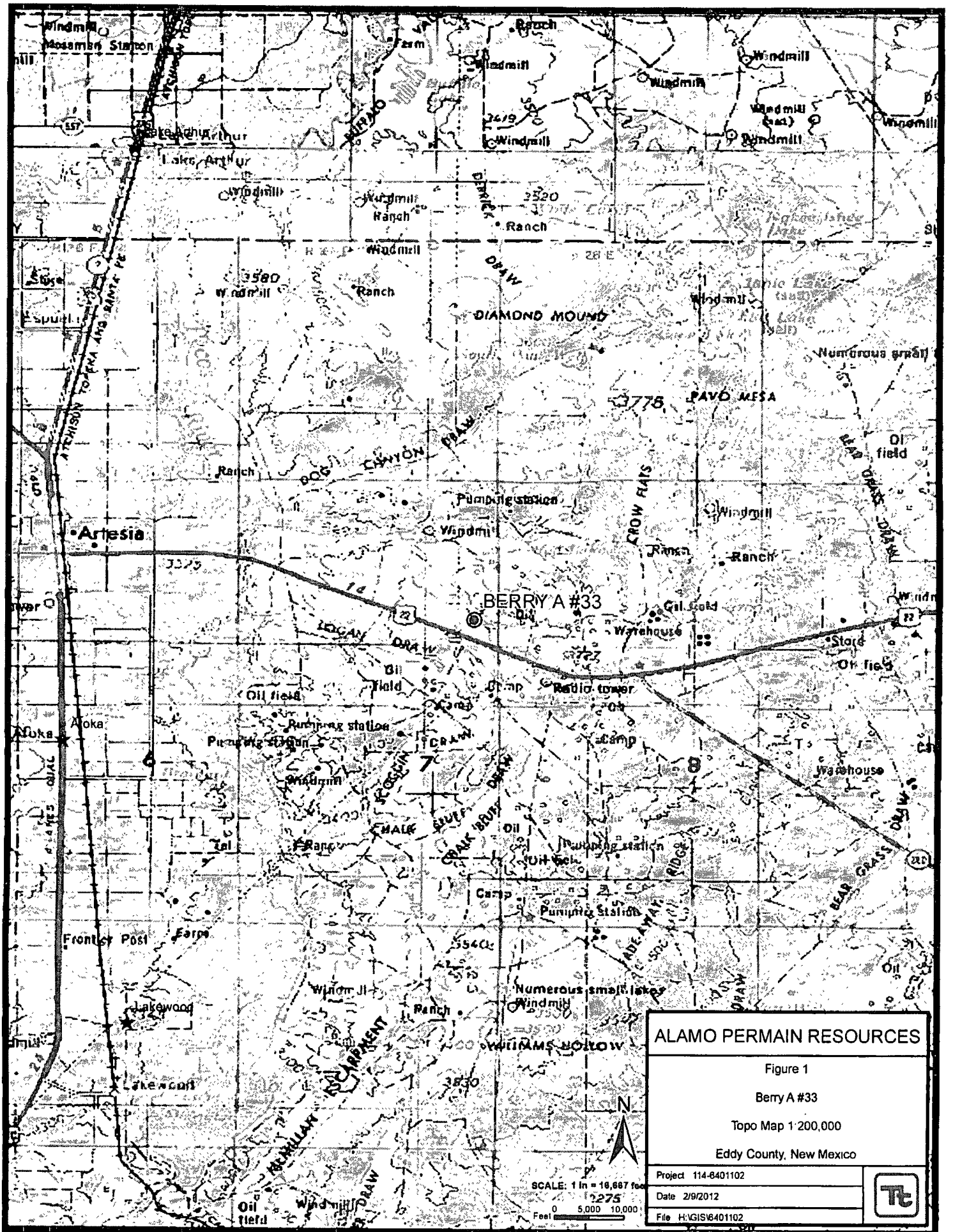
Upon completion, a final report will be submitted to the NMOCD. If you have any questions or require any additional information regarding this work plan, please call me at (432) 682-4559.

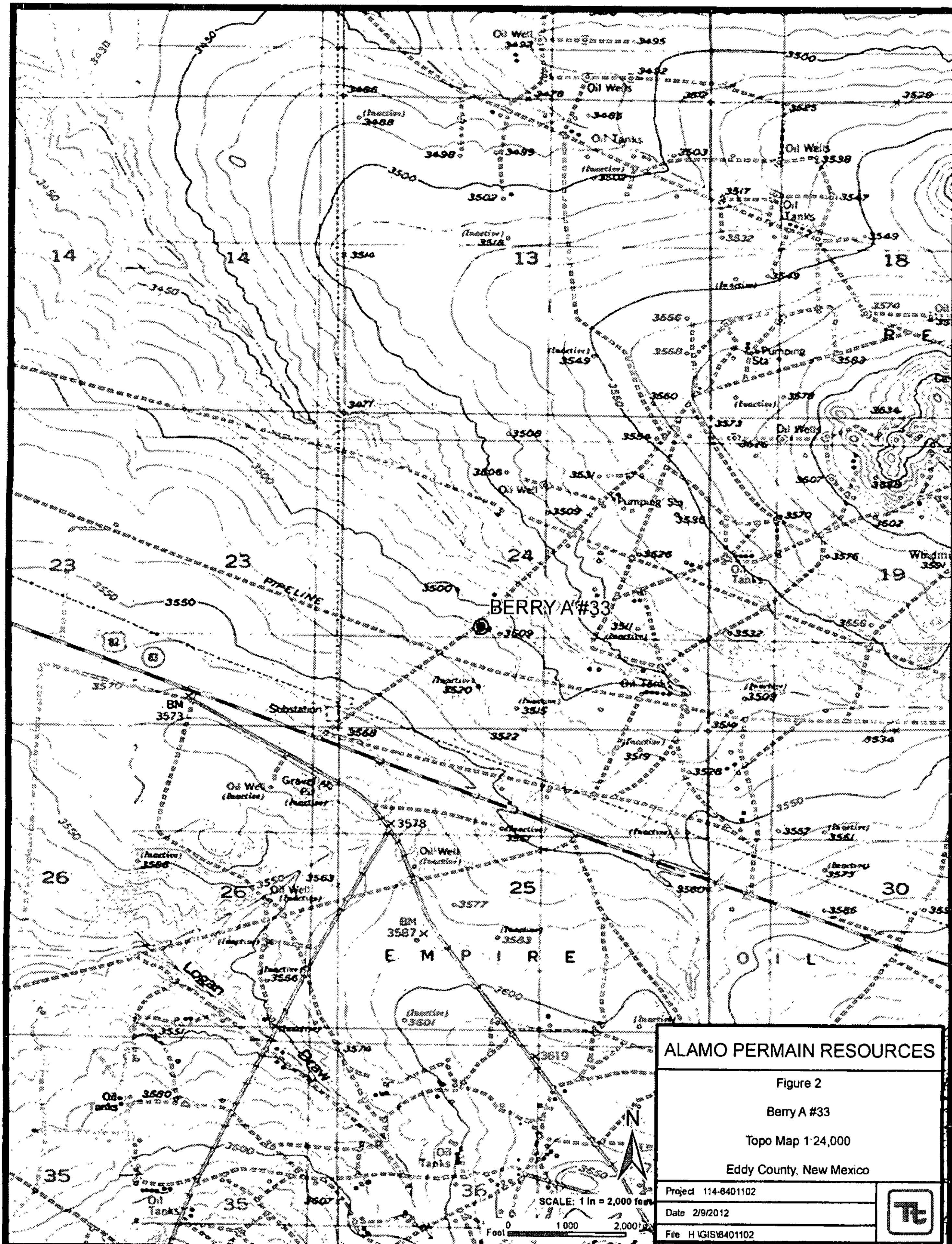
Respectfully submitted,
TETRA TECH

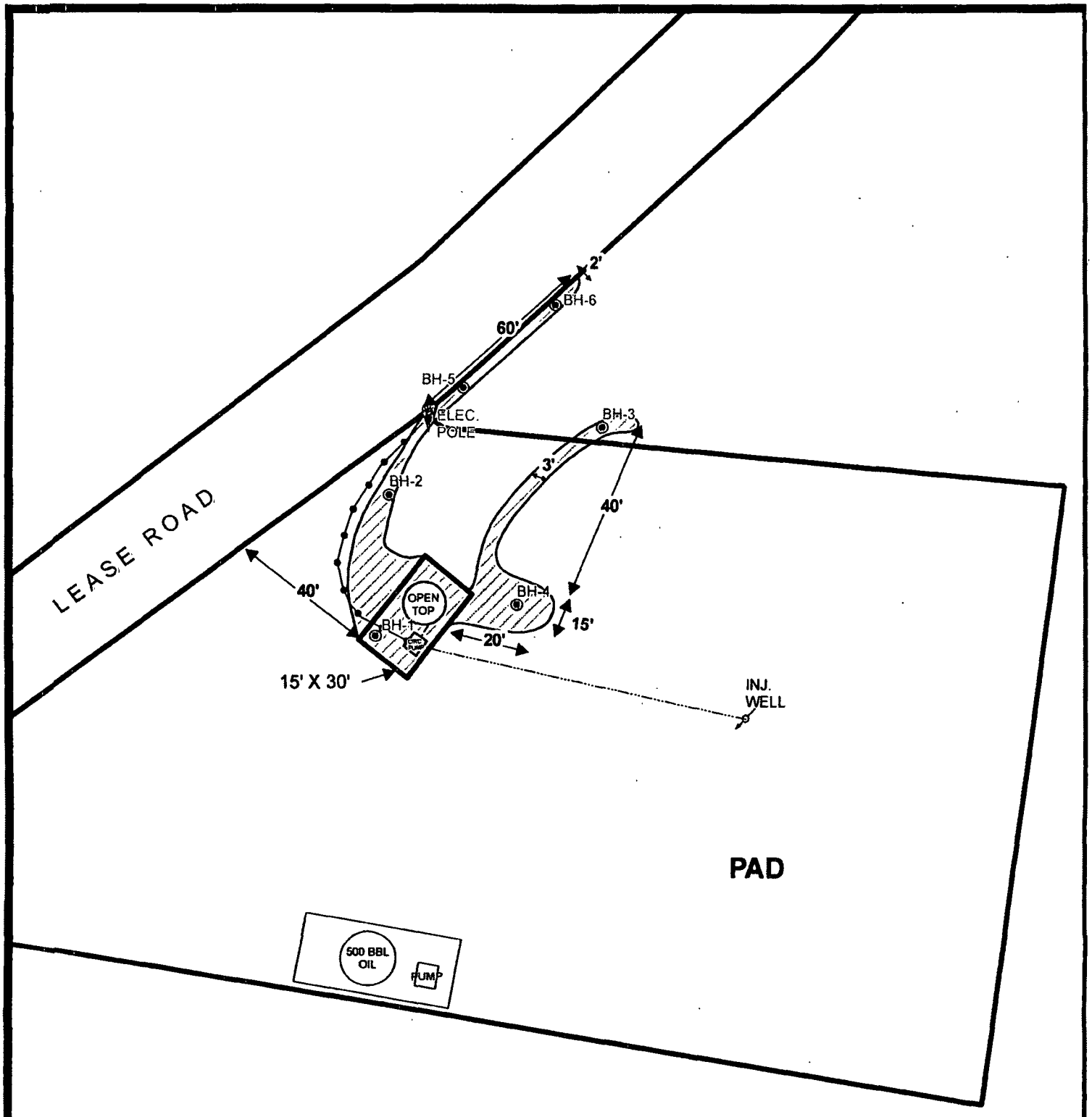
Kim Dorey
Staff II Geologist

cc: Jennifer Van Curen - BLM

Figures


BERRY A #33
Artesia
Aloka
Lake Arthur
Frontier Post
Lakewood
DIAMOND MOUND
PAVO MESA
DOG CANYON DRAW
CROW FLATS
LOCAN DRAW
BEAR GRASS DRAW
RICHARDSON DRAW
WILLIAMS HOLLOW
ESCARPMENT
ATCHISON TOPEKA AND SANTA FE
Numerous small lakes
Oil field
Pumping station
Warehouse
Radio tower
Camp
Ranch
Windmill
3778
3580
3520
3540
3830
2275
ALAMO PERMAIN RESOURCES
Figure 1
Berry A #33
Topo Map 1:200,000
Eddy County, New Mexico
Project 114-6401102
Date 2/9/2012
File H:\GIS\6401102
N
SCALE: 1 In = 16,667 feet
0 5,000 10,000
Feet
Drawn By Isabel Marmolejo


ALAMO PERMAIN RESOURCES
Figure 2
Berry A #33
Topo Map 1:24,000
Eddy County, New Mexico
Project 114-6401102
Date 2/9/2012
File H:\GIS\6401102
BERRY A #33
PIPELINE
Substation
E M P I R E
O I L
Logan
Draw
N
SCALE: 1 In = 2,000 feet
Feet
0
1,000
2,000



EXPLANATION

- BORE HOLE SAMPLE LOCATIONS
- ELECTRICAL POLE
- INJ. WELL
- LINE
- BURIED ELEC. LINE
- SPILL AREA

N

SCALE: 1 IN = 42 FEET

Feet 0 25 50

ALAMO PERMAIN RESOURCES

Figure 3

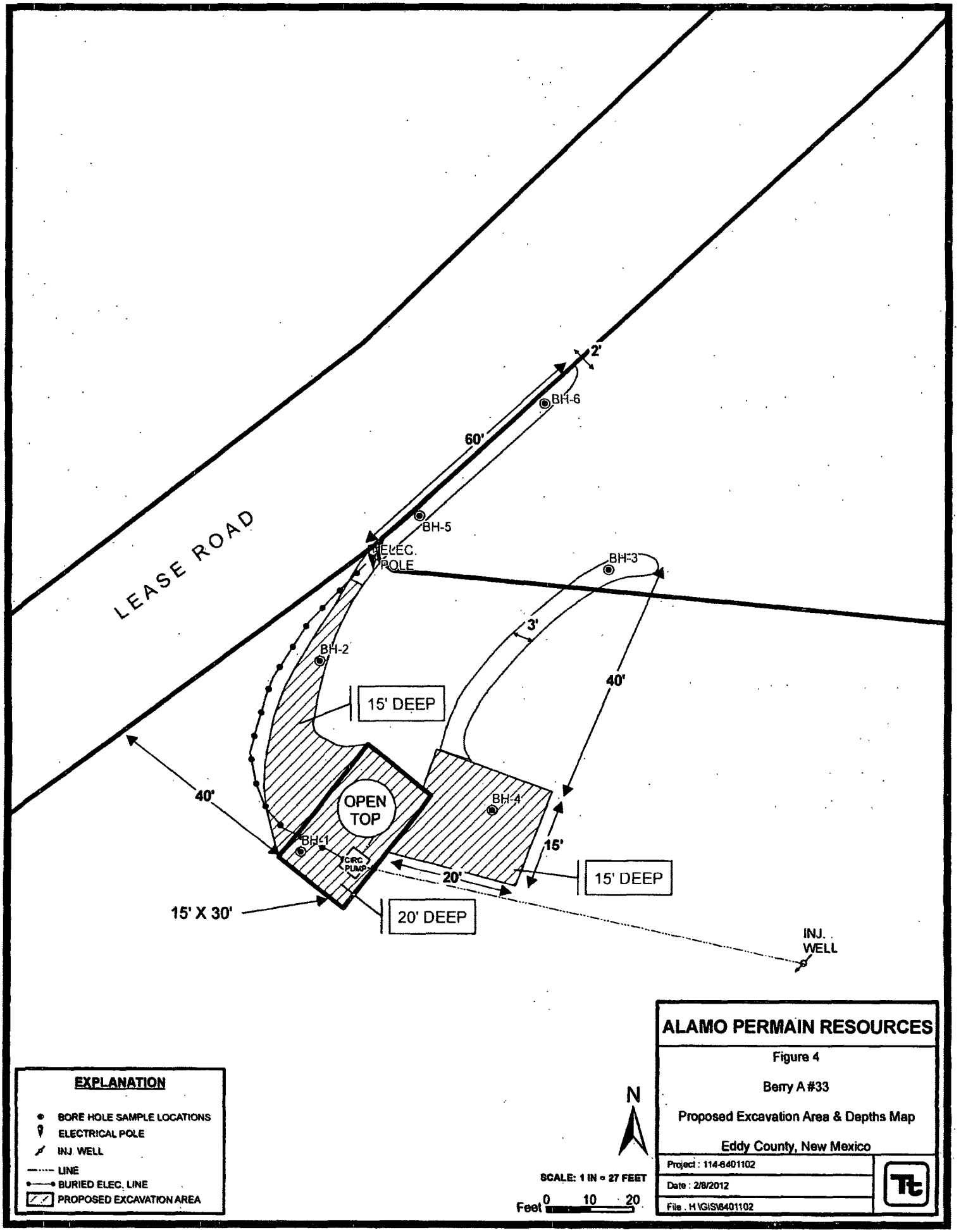
Berry A #33

Spill Assessment Map

Eddy County, New Mexico

Project : .114-6401102	
Date : 2/8/2012	
File . H:\GIS\6401102	

Drawn By: Isabel Marmolejo



Drawn By: Isabel Marmolejo

Tables

Table 1
Alamo
Berry A #33
Eddy 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						
BH-1 Inside berm	1/23/2012	0-1	X		3.01	<50.0	3.01	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	8,250
	"	2-3	X		-	-	-	-	-	-	-	-	10,900
	"	4-5	X		-	-	-	-	-	-	-	-	9,010
	"	6-7	X		-	-	-	-	-	-	-	-	1,010
	"	9-10	X		-	-	-	-	-	-	-	-	8,460
	"	14-15	X		-	-	-	-	-	-	-	-	14,200
	"	19-20	X		-	-	-	-	-	-	-	-	11,300
	"	29-30	X		-	-	-	-	-	-	-	-	1,480
	"	39-40	X		-	-	-	-	-	-	-	-	<200
BH-2 West of source	1/23/2012	0-1	X		2.78	<50.0	2.78	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	15,100
	"	2-3	X		-	-	-	-	-	-	-	-	15,000
	"	4-5	X		-	-	-	-	-	-	-	-	13,500
	"	6-7	X		-	-	-	-	-	-	-	-	6,610
	"	9-10	X		-	-	-	-	-	-	-	-	2,800
	"	14-15	X		-	-	-	-	-	-	-	-	14,700
	"	19-20	X		-	-	-	-	-	-	-	-	6,800
	"	24-25	X		-	-	-	-	-	-	-	-	291
	"	29-30	X		-	-	-	-	-	-	-	-	858
	"	39-40	X		-	-	-	-	-	-	-	-	<200

Table 1
Alamo
Berry A #33
Eddy 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						
BH-3 North of source	1/23/2012	0-1	X		2.54	<50.0	2.54	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	537
	"	2-3	X		-	-	-	-	-	-	-	-	790
	"	4-5	X		-	-	-	-	-	-	-	-	482
	"	6-7	X		-	-	-	-	-	-	-	-	3,050
	"	9-10	X		-	-	-	-	-	-	-	-	386
BH-4 East of source	1/23/2012	0-1	X		2.52	<50.0	2.52	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	4,700
	"	2-3	X		-	-	-	-	-	-	-	-	5,750
	"	4-5	X		-	-	-	-	-	-	-	-	9,550
	"	6-7	X		-	-	-	-	-	-	-	-	771
	"	9-10	X		-	-	-	-	-	-	-	-	5,050
	"	14-15	X		-	-	-	-	-	-	-	-	12,200
	"	19-20	X		-	-	-	-	-	-	-	-	6,660
	"	24-25	X		-	-	-	-	-	-	-	-	2,150
	"	29-30	X		-	-	-	-	-	-	-	-	1,190
	"	39-40	X		-	-	-	-	-	-	-	-	256

Table 1
Alamo
Berry A #33
Eddy 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						
BH-5 Along Road	1/23/2012	0-1	X		2.54	<50.0	2.54	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	560
	"	2-3	X		-	-	-	-	-	-	-	-	613
	"	4-5	X		-	-	-	-	-	-	-	-	2,180
		6-7	X		-	-	-	-	-	-	-	-	2,150
		9-10	X		-	-	-	-	-	-	-	-	375
		14-15	X		-	-	-	-	-	-	-	-	1,540
		19-20	X		-	-	-	-	-	-	-	-	217
BH-6 Along Road	1/23/2012	0-1	X		2.22	<50.0	2.22	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	450
	"	2-3	X		-	-	-	-	-	-	-	-	532
	"	4-5	X		-	-	-	-	-	-	-	-	<200

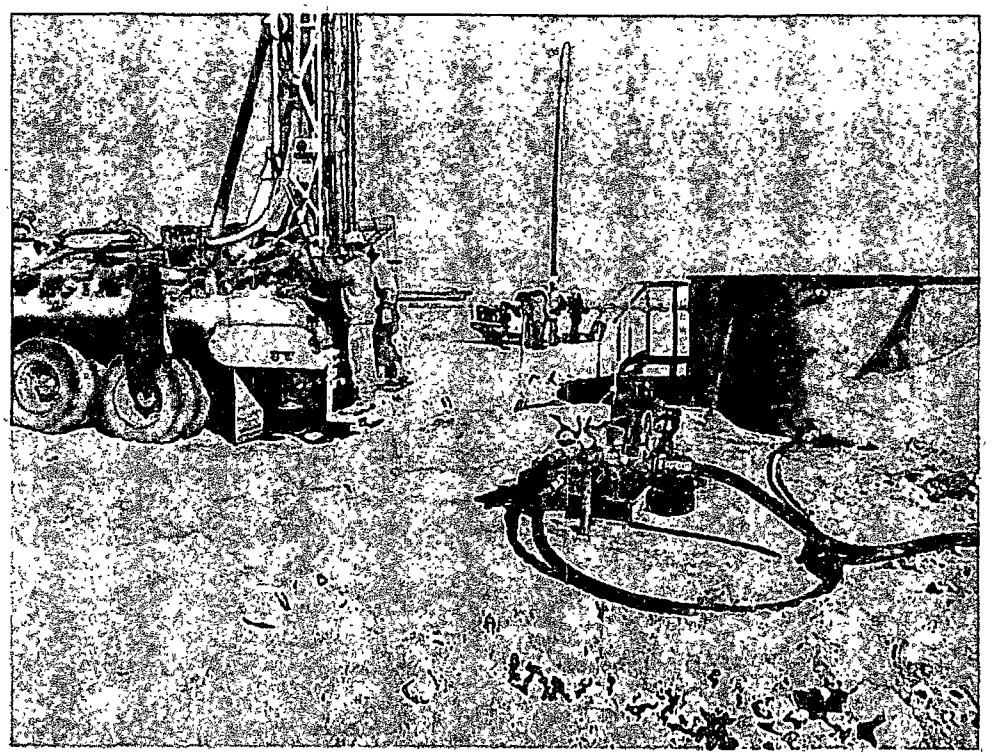
(--) Not Analyzed

Proposed excavation depths

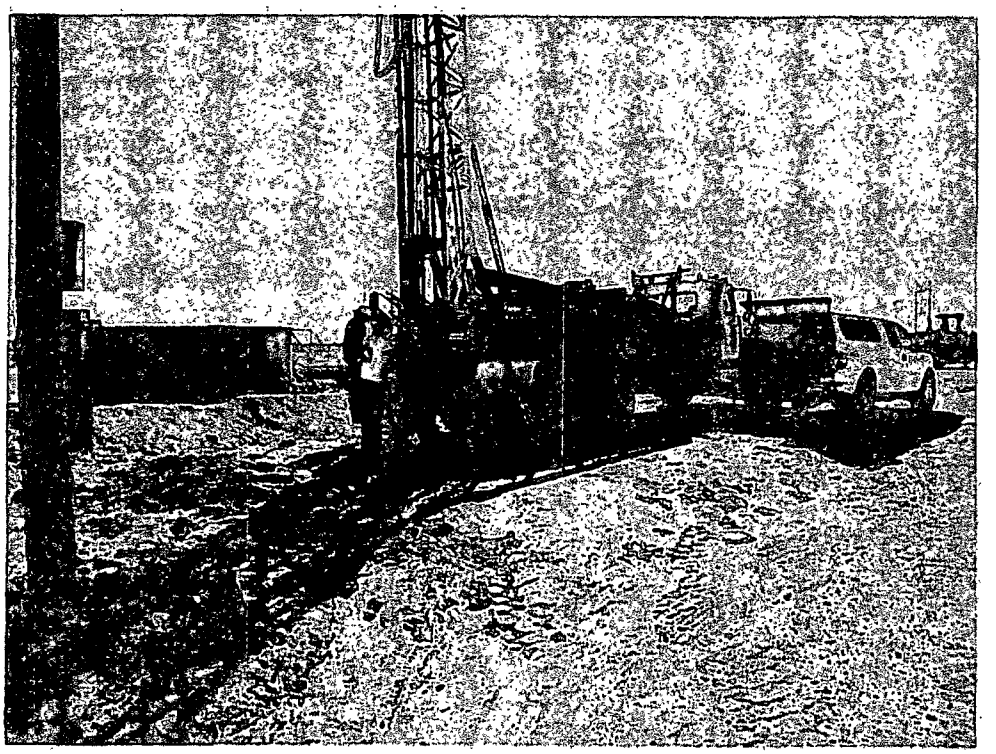
Photos

Alamo Permian Resources LLC
Berry A #33 Tank Battery
Eddy County, New Mexico
January 23, 2012

TETRA TECH



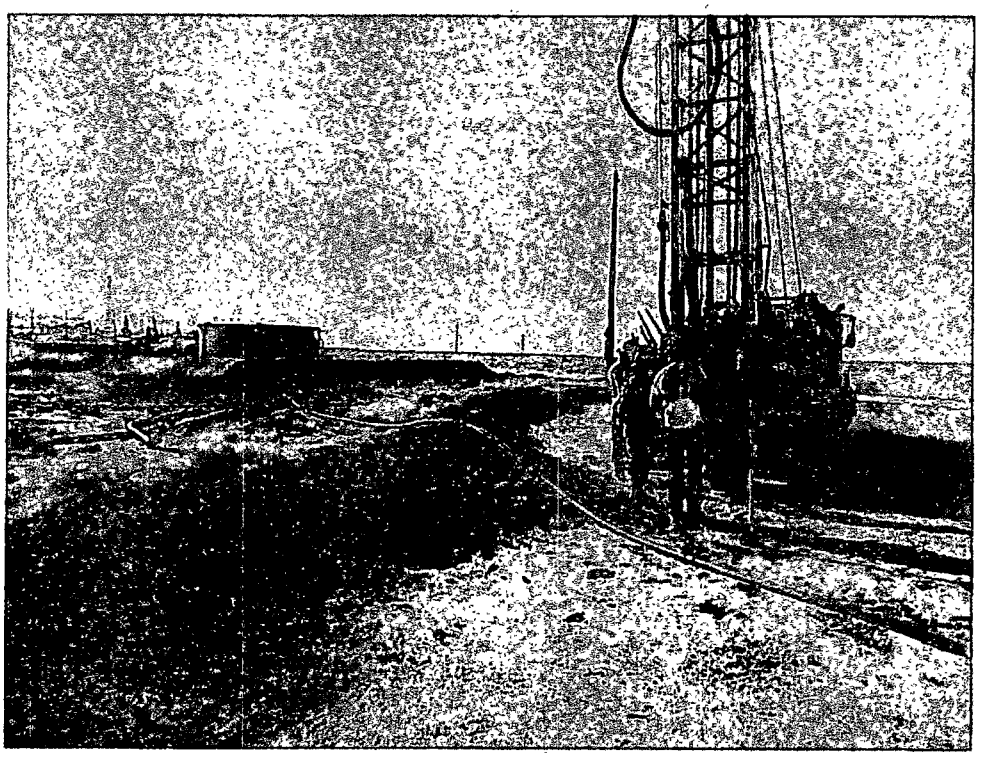
View north west – Inside berm area, installation of BH-1



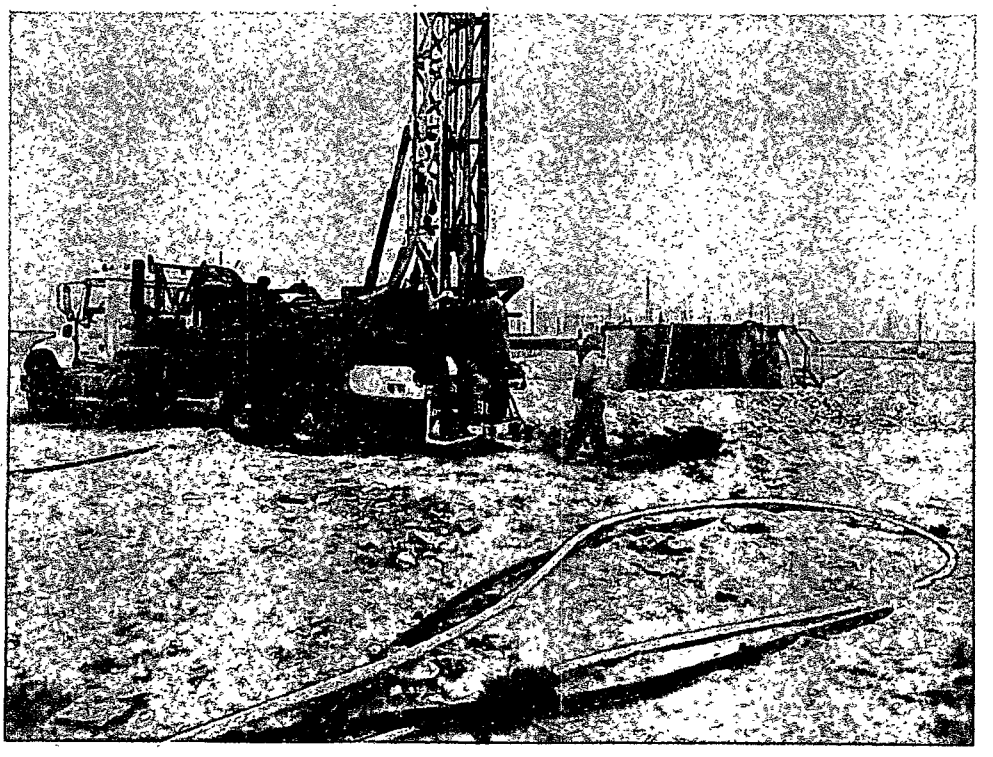
View east – Installation of BH-2 west of open top

Alamo Permian Resources LLC
Berry A #33 Tank Battery
Eddy County, New Mexico
January 23, 2012

TETRA TECH



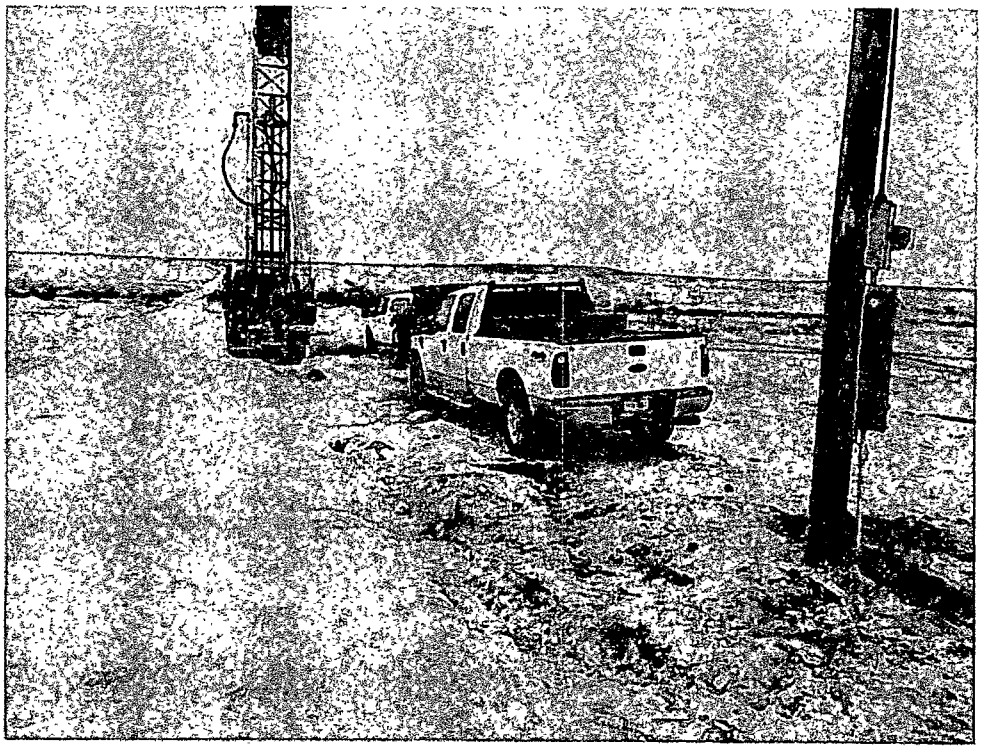
View west – Installation of BH-3 along north finger of spill path



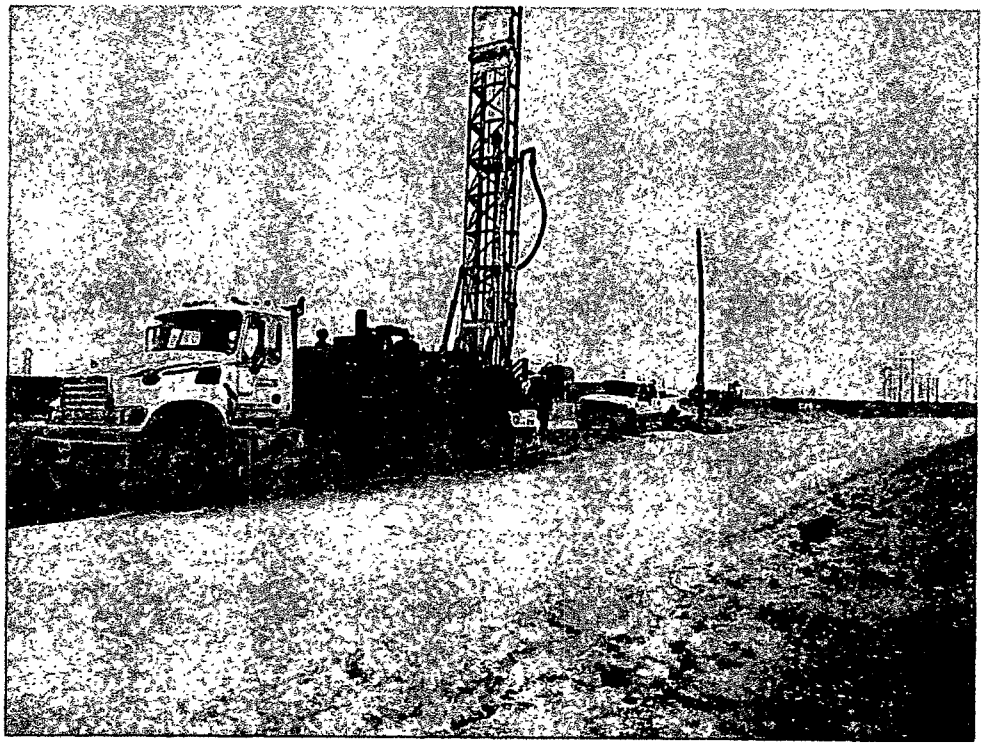
View west – Installation of BH-4, east of open top

Alamo Permian Resources LLC
Berry A #33 Tank Battery
Eddy County, New Mexico
January 23, 2012

TETRA TECH



View north – Along lease road near BH-5



View east – Along lease road, installation of BH-6

Appendix A

1ST

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 ALAMO PERMIAN RESOUCES, LLC	Contact STEVEN MASTIN
Address 415 W. WALL ST. SUITE 500	Telephone No. 432 557 5847
Facility Name BERRY A 33	Facility Type

Surface Owner FEDERAL	Mineral Owner FEDERAL	API No. 30-015-25154

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	24	17S	27E	1650	S	2040	W	EDDY

Latitude 32.8168411354531

Longitude -104.234151895391

NATURE OF RELEASE

Type of Release: OIL & WATER	Volume of Release: EST 18 BBLS (3bbls oil & 15 bbls water)	Volume Recovered:
Source of Release: OVERFLOW TANK	Date and Hour of Occurrence: EST JULY 14, 2011	Date and Hour of Discovery APPROX AUG 14, 2011
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom?	
By Whom? JENNIFER VAN CUREN w/ BLM	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.*

Cause of problem: An electrical malfunction caused an injection pump to be down long enough that the overflow tank ran over

Describe Area Affected and Cleanup Action Taken.*

TBD

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: Carie Stoker	OIL CONSERVATION DIVISION	
Printed Name: CARIE STOKER	Approved by Environmental Specialist:	
Title: REGULATORY/ PRODUCTION TECH	Approval Date:	Expiration Date:
E-mail Address: cstoker@alamoresources.com	Conditions of Approval:	Attached ☐
Date: 08/29/2011 Phone: 432 664 7659		

* Attach Additional Sheets If Necessary

2nd

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 ALAMO PERMIAN RESOUCES, LLC	Contact STEVEN MASTIN
Address 415 W. WALL ST. SUITE 500	Telephone No. 432 557 5847
Facility Name BERRY A 33	Facility Type

Surface Owner FEDERAL	Mineral Owner FEDERAL	API No. 30-015-25154

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
K	24	17S	27E	1650	S	2040	W	EDDY

Latitude 32.8168411354531

Longitude -104.234151895391

NATURE OF RELEASE

Type of Release: WATER	Volume of Release: 25 BBLS	Volume Recovered:
Source of Release: OVERFLOW TANK	Date and Hour of Occurrence: AUG 30, 2011	Date and Hour of Discovery AUG 30, 2011
Was Immediate Notice Given? ☒ Yes ☐ No ☐ Not Required	If YES, To Whom? STEVEN MASTIN	
By Whom? RICKY RODRIGUEZ, PUMPER	Date and Hour AUG 30, 2011	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.*

Describe Cause of Problem and Remedial Action Taken.*

Cause of problem: An electrical malfunction caused an injection pump to be down long enough that the overflow tank ran over

Describe Area Affected and Cleanup Action Taken.*

TBD

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: Carie Stoker	OIL CONSERVATION DIVISION	
Printed Name: CARIE STOKER	Approved by Environmental Specialist:	
Title: REGULATORY/ PRODUCTION TECH	Approval Date:	Expiration Date:
E-mail Address: cstoker@alamoresources.com	Conditions of Approval:	Attached ☐
Date: 08/30/2011 Phone: 432 664 7659		

* Attach Additional Sheets If Necessary

Appendix B

Water Well Data
Average Depth to Groundwater (ft)
Alamo - Berry A #33
Eddy County, New Mexico

16 South 26 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

16 South 27 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 70	26	25
31	32	33	34	35	36

16 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 **61**	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

17 South 26 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

17 South 27 East

6	5 30	4	3	2	1
7	8	9	10	11 54	12
18 86	17 283	16 172	15	14	13
19	20	21	22	23 40	24 SITE
30	29	28	27	26	25
31	32	33	34	35	36

17 South 28 East

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19 191	20	21	22 79	23	24
30	29	28	27	26	25
31	32	33	34	35	36

18 South 26 East

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

18 South 27 East

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

18 South 28 East

6	5	4 108	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35 65	36

- New Mexico State Engineers Well Reports
- USGS Well Reports
- Geology and Groundwater Conditions in Southern Eddy, County, NM
- NMOCD - Groundwater Data
- Field water level
- New Mexico Water and Infrastructure Data System
- Site Location - Berry A #33

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 04554			ED	1	23		17S	27E		569859	3631947*	220	40	180

Average Depth to Water: **40 feet**

Minimum Depth: **40 feet**

Maximum Depth: **40 feet**

Record Count: 1

PLSS Search:

Section(s): 23-24 Township: 17S Range: 27E

***UTM location was derived from PLSS - see Help**

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

New Mexico Office of the State Engineer
Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest) (NAD83 UTM in meters) (In feet)

POD Number	POD Code	Subbasin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Depth Well	Depth Water	Water Column
RA 04561			ED	4	2		26	17S	27E	570871	3630142*	250		
											Average Depth to Water:		--	
											Minimum Depth:		--	
											Maximum Depth:		--	

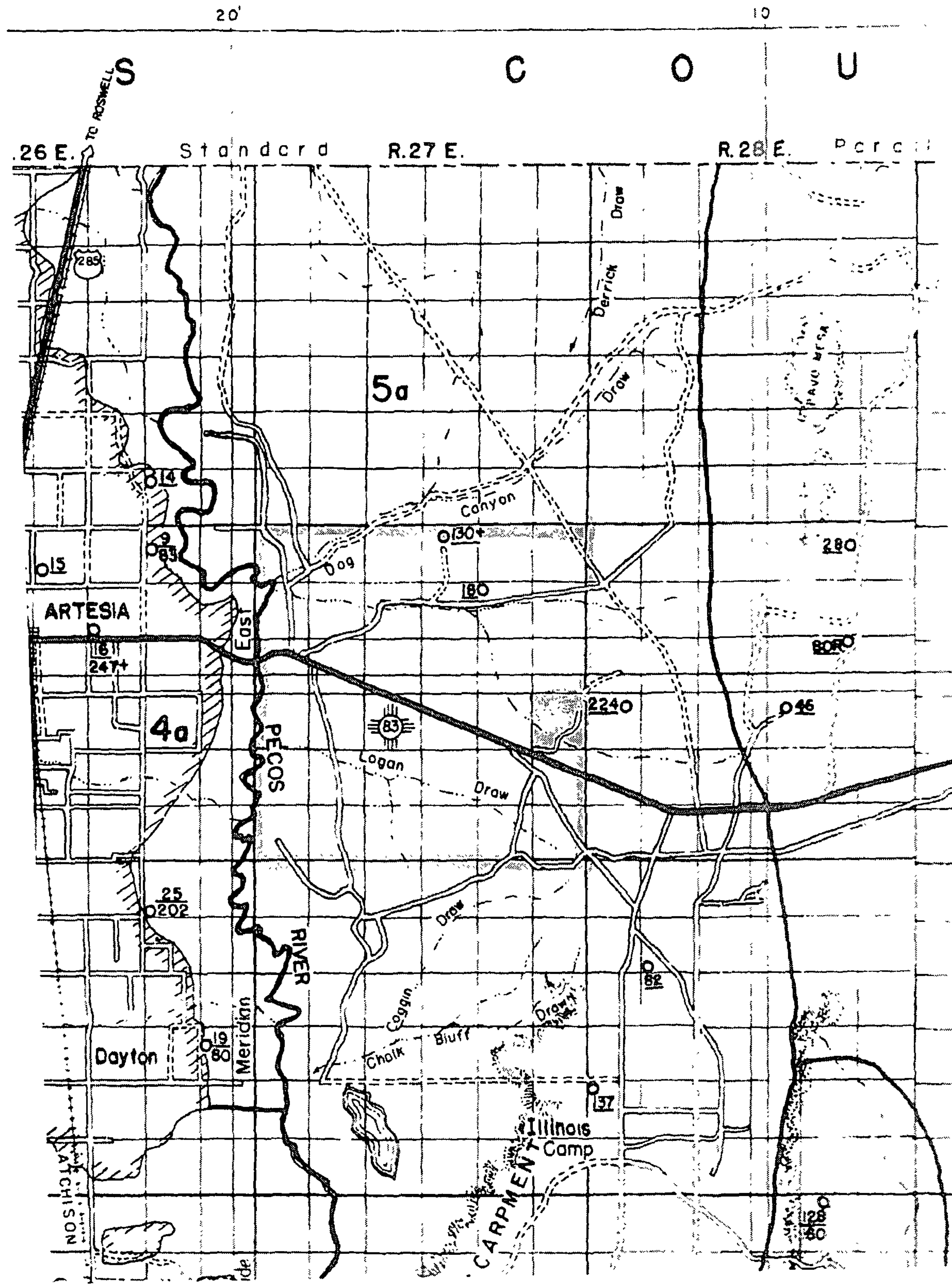
Record Count: 1

PLSS Search:

Section(s): 25-26 Township: 17S Range: 27E

***UTM location was derived from PLSS - see Help**

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.


20'
10
S
C O U
R.26 E.
TO ROSWELL
Standard
R.27 E.
R.28 E.
285
Derrick
Draw
Draw
PAVO MESA
5a
Canyon
Dog
14
9
83
15
130+
180
280
ARTESIA
161
247+
East
80R
224
46
4a
PECOS
83
Logan
Draw
Draw
25
202
RIVER
82
Coggin
Drawn
Chalk
Bluff
19
80
Dayton
Meridian
37
Illinois
Camp
CARPMENT
ATCHISON
128
60

Appendix C

Summary Report

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

Report Date: January 31, 2012

Work Order: 12012602

Project Location: Eddy Co., NM
Project Name: Alamo/Berry A #33
Project Number: 114-6401102

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
287421	BH-1 0-1'	soil	2012-01-23	00:00	2012-01-25
287422	BH-1 2-3'	soil	2012-01-23	00:00	2012-01-25
287423	BH-1 4-5'	soil	2012-01-23	00:00	2012-01-25
287424	BH-1 6-7'	soil	2012-01-23	00:00	2012-01-25
287425	BH-1 9-10'	soil	2012-01-23	00:00	2012-01-25
287426	BH-1 14-15'	soil	2012-01-23	00:00	2012-01-25
287427	BH-1 19-20'	soil	2012-01-23	00:00	2012-01-25
287428	BH-1 29-30'	soil	2012-01-23	00:00	2012-01-25
287429	BH-1 39-40'	soil	2012-01-23	00:00	2012-01-25
287432	BH-2 0-1'	soil	2012-01-23	00:00	2012-01-25
287433	BH-2 2-3'	soil	2012-01-23	00:00	2012-01-25
287434	BH-2 4-5'	soil	2012-01-23	00:00	2012-01-25
287435	BH-2 6-7'	soil	2012-01-23	00:00	2012-01-25
287436	BH-2 9-10'	soil	2012-01-23	00:00	2012-01-25
287437	BH-2 14-15'	soil	2012-01-23	00:00	2012-01-25
287438	BH-2 19-20'	soil	2012-01-23	00:00	2012-01-25
287439	BH-2 24-25'	soil	2012-01-23	00:00	2012-01-25
287440	BH-2 29-30'	soil	2012-01-23	00:00	2012-01-25
287441	BH-2 39-40'	soil	2012-01-23	00:00	2012-01-25
287442	BH-3 0-1'	soil	2012-01-23	00:00	2012-01-25
287443	BH-3 2-3'	soil	2012-01-23	00:00	2012-01-25
287444	BH-3 4-5'	soil	2012-01-23	00:00	2012-01-25
287445	BH-3 6-7'	soil	2012-01-23	00:00	2012-01-25
287446	BH-3 9-10'	soil	2012-01-23	00:00	2012-01-25
287451	BH-4 0-1'	soil	2012-01-24	00:00	2012-01-25
287452	BH-4 2-3'	soil	2012-01-24	00:00	2012-01-25
287453	BH-4 4-5'	soil	2012-01-24	00:00	2012-01-25
287454	BH-4 6-7'	soil	2012-01-24	00:00	2012-01-25
287455	BH-4 9-10'	soil	2012-01-24	00:00	2012-01-25
287456	BH-4 14-15'	soil	2012-01-24	00:00	2012-01-25

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
287457	BH-4 19-20'	soil	2012-01-24	00:00	2012-01-25
287458	BH-4 24-25'	soil	2012-01-24	00:00	2012-01-25
287459	BH-4 29-30'	soil	2012-01-24	00:00	2012-01-25
287461	BH-5 0-1'	soil	2012-01-24	00:00	2012-01-25
287462	BH-5 2-3'	soil	2012-01-24	00:00	2012-01-25
287463	BH-5 4-5'	soil	2012-01-24	00:00	2012-01-25
287470	BH-6 0-1'	soil	2012-01-24	00:00	2012-01-25
287471	BH-6 2-3'	soil	2012-01-24	00:00	2012-01-25
287472	BH-6 4-5'	soil	2012-01-24	00:00	2012-01-25

Sample: 287421 - BH-1 0-1'

Param	Flag	Result	Units	RL
Chloride		**8250**	mg/Kg	4

Sample: 287422 - BH-1 2-3'

Param	Flag	Result	Units	RL
Chloride		**10900**	mg/Kg	4

Sample: 287423 - BH-1 4-5'

Param	Flag	Result	Units	RL
Chloride		**9010**	mg/Kg	4

Sample: 287424 - BH-1 6-7'

Param	Flag	Result	Units	RL
Chloride		**1010**	mg/Kg	4

Sample: 287425 - BH-1 9-10'

Param	Flag	Result	Units	RL
Chloride		**8460**	mg/Kg	4

Sample: 287426 - BH-1 14-15'

continued . .

sample 287426 continued ...

Param	Flag	Result	Units	RL

Param	Flag	Result	Units	RL
Chloride		**14200**	mg/Kg	4

Sample: 287427 - BH-1 19-20'

Param	Flag	Result	Units	RL
Chloride		**11300**	mg/Kg	4

Sample: 287428 - BH-1 29-30'

Param	Flag	Result	Units	RL
Chloride		**1480**	mg/Kg	4

Sample: 287429 - BH-1 39-40'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 287432 - BH-2 0-1'

Param	Flag	Result	Units	RL
Chloride		**15100**	mg/Kg	4

Sample: 287433 - BH-2 2-3'

Param	Flag	Result	Units	RL
Chloride		**15000**	mg/Kg	4

Sample: 287434 - BH-2 4-5'

Param	Flag	Result	Units	RL
Chloride		**13500**	mg/Kg	4

Sample: 287435 - BH-2 6-7'

Param	Flag	Result	Units	RL
Chloride		**6610**	mg/Kg	4

Sample: 287436 - BH-2 9-10'

Param	Flag	Result	Units	RL
Chloride		**2800**	mg/Kg	4

Sample: 287437 - BH-2 14-15'

Param	Flag	Result	Units	RL
Chloride		**14700**	mg/Kg	4

Sample: 287438 - BH-2 19-20'

Param	Flag	Result	Units	RL
Chloride		**6800**	mg/Kg	4

Sample: 287439 - BH-2 24-25'

Param	Flag	Result	Units	RL
Chloride		**291**	mg/Kg	4

Sample: 287440 - BH-2 29-30'

Param	Flag	Result	Units	RL
Chloride		**858**	mg/Kg	4

Sample: 287441 - BH-2 39-40'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Sample: 287442 - BH-3 0-1'

Param	Flag	Result	Units	RL
Chloride		**537**	mg/Kg	4

Sample: 287443 - BH-3 2-3'

Param	Flag	Result	Units	RL
Chloride		**790**	mg/Kg	4

Sample: 287444 - BH-3 4-5'

Param	Flag	Result	Units	RL
Chloride		**482**	mg/Kg	4

Sample: 287445 - BH-3 6-7'

Param	Flag	Result	Units	RL
Chloride		**3050**	mg/Kg	4

Sample: 287446 - BH-3 9-10'

Param	Flag	Result	Units	RL
Chloride		**386**	mg/Kg	4

Sample: 287451 - BH-4 0-1'

Param	Flag	Result	Units	RL
Chloride		**4700**	mg/Kg	4

Sample: 287452 - BH-4 2-3'

Param	Flag	Result	Units	RL
Chloride		**5750**	mg/Kg	4

Sample: 287453 - BH-4 4-5'

Param	Flag	Result	Units	RL
Chloride		**9550**	mg/Kg	4

Sample: 287454 - BH-4 6-7'

Param	Flag	Result	Units	RL
Chloride		**771**	mg/Kg	4

Sample: 287455 - BH-4 9-10'

Param	Flag	Result	Units	RL
Chloride		**5050**	mg/Kg	4

Sample: 287456 - BH-4 14-15'

Param	Flag	Result	Units	RL
Chloride		**12200**	mg/Kg	4

Sample: 287457 - BH-4 19-20'

Param	Flag	Result	Units	RL
Chloride		**6660**	mg/Kg	4

Sample: 287458 - BH-4 24-25'

Param	Flag	Result	Units	RL
Chloride		**2150**	mg/Kg	4

Sample: 287459 - BH-4 29-30'

Param	Flag	Result	Units	RL
Chloride		**1190**	mg/Kg	4

Sample: 287461 - BH-5 0-1'

Param	Flag	Result	Units	RL
Chloride		**560**	mg/Kg	4

Sample: 287462 - BH-5 2-3'

Param	Flag	Result	Units	RL
Chloride		**613**	mg/Kg	4

Sample: 287463 - BH-5 4-5'

Param	Flag	Result	Units	RL
Chloride		**2180**	mg/Kg	4

Sample: 287470 - BH-6 0-1'

Param	Flag	Result	Units	RL
Chloride		**450**	mg/Kg	4

Sample: 287471 - BH-6 2-3'

Param	Flag	Result	Units	RL
Chloride		**532**	mg/Kg	4

Sample: 287472 - BH-6 4-5'

Param	Flag	Result	Units	RL
Chloride		<200	mg/Kg	4

Summary Report

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

Report Date: February 8, 2012

Work Order: 12012602

Project Location: Eddy Co., NM
Project Name: Alamo/Berry A #33
Project Number: 114-6401102

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
287421	BH-1 0-1'	soil	2012-01-23	00:00	2012-01-25
287432	BH-2 0-1'	soil	2012-01-23	00:00	2012-01-25
287442	BH-3 0-1'	soil	2012-01-23	00:00	2012-01-25
287451	BH-4 0-1'	soil	2012-01-24	00:00	2012-01-25
287460	BH-4 39-40'	soil	2012-01-24	00:00	2012-01-25
287461	BH-5 0-1'	soil	2012-01-24	00:00	2012-01-25
287464	BH-5 6-7'	soil	2012-01-24	00:00	2012-01-25
287465	BH-5 9-10'	soil	2012-01-24	00:00	2012-01-25
287466	BH-5 14-15'	soil	2012-01-24	00:00	2012-01-25
287467	BH-5 19-20'	soil	2012-01-24	00:00	2012-01-25
287470	BH-6 0-1'	soil	2012-01-24	00:00	2012-01-25

	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)
287421 - BH-1 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**3.01**
287432 - BH-2 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**2.78**
287442 - BH-3 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**2.54**
287451 - BH-4 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**2.52**
287461 - BH-5 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**2.54**
287470 - BH-6 0-1'	<0.0200	<0.0200	<0.0200	<0.0200	<50.0	**2.22**

Sample: 287460 - BH-4 39-40'

Param	Flag	Result	Units	RL
Chloride		**256**	mg/Kg	4

Sample: 287464 - BH-5 6-7'

Param	Flag	Result	Units	RL
Chloride		**2150**	mg/Kg	4

Sample: 287465 - BH-5 9-10'

Param	Flag	Result	Units	RL
Chloride		**375**	mg/Kg	4

Sample: 287466 - BH-5 14-15'

Param	Flag	Result	Units	RL
Chloride		**1540**	mg/Kg	4

Sample: 287467 - BH-5 19-20'

Param	Flag	Result	Units	RL
Chloride		**217**	mg/Kg	4