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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-144
June 1, 2004

For drilling and production facilities, submit to appropriate NMOCD District Office.
For downstream facilities, submit to Santa Fe office

Pit or Below-Grade Tank Registration or Closure

Is pit or below-grade tank covered by a "general plan"? Yes ☐ No ☒
Type of action: Registration of a pit or below-grade tank ☐ Closure of a pit or below-grade tank ☒

Operator: Duke Energy Field Services, LP Telephone: 432/620-4207 e-mail address: lward@duke-energy.com
Address: 10 Desta Dr., Suite 400-W, Midland, TX 79705
Facility or well name: Historic (Amoco State S #3) API #: N/A U/L or Qtr/Qtr Unit E Sec 6 T 23S R 38E
County: Lea Latitude 32° 20' 26.46043" Longitude 103° 5' 33.02174" NAD: 1927 ☒ 1983 ☐ Surface Owner Federal ☐ State ☐ Private ☒ Indian ☐

Pit	Below-grade tank	
Type: Drilling ☐ Production ☐ Disposal ☐ historic - unknown Workover ☐ Emergency ☐ Lined ☐ Unlined ☒ Liner type: Synthetic ☐ Thickness ____mil Clay ☐ Pit Volume ____bbl unknown	Volume: ____bbl Type of fluid: ____ Construction material: ____ Double-walled, with leak detection? Yes ☐ If not, explain why not.	
Depth to ground water (vertical distance from bottom of pit to seasonal high water elevation of ground water.)	Less than 50 feet 50 feet or more, but less than 100 feet 100 feet or more	(20 points) (10 points) (0 points) Ø
Wellhead protection area: (Less than 200 feet from a private domestic water source, or less than 1000 feet from all other water sources.)	Yes No	(20 points) (0 points) TBD
Distance to surface water: (horizontal distance to all wetlands, playas, irrigation canals, ditches, and perennial and ephemeral watercourses.)	Less than 200 feet 200 feet or more, but less than 1000 feet 1000 feet or more	(20 points) (10 points) (0 points) TBD
	Ranking Score (Total Points)	

If this is a pit closure: (1) attach a diagram of the facility showing the pit's relationship to other equipment and tanks. (2) Indicate disposal location: (check the onsite box if your are burying in place) onsite ☐ offsite ☒ If offsite, name of facility TBD. (3) Attach a general description of remedial action taken including remediation start date and end date. (4) Groundwater encountered: No ☐ Yes ☐ If yes, show depth below ground surface ____ft. and attach sample results. (5) Attach soil sample results and a diagram of sample locations and excavations.

Additional Comments: The pit was discovered on 7/7/04. The pit is a historic pit that DEFS intends to close in accordance with the Unlined Surface Impoundment Closure Guidelines (February 1993). The pit is approximately 20' x 20' in size, located in Unit E, Section 6, T23S, R38E. Environmental Plus, Inc. has been retained by DEFS to perform delineation of the pit and will also provide all written correspondence. There is no equipment remaining on location. While DEFS does not claim to have constructed or operated the pit and acquired the pit through acquisition, DEFS has determined that the pit does require closure.

I hereby certify that the information above is true and complete to the best of my knowledge and belief. I further certify that the above-described pit or below-grade tank has been/will be constructed or closed according to NMOCD guidelines ☒, a general permit ☐, or an (attached) alternative OCD-approved plan ☐.
Date: 7/30/04
Printed Name/Title Lynn Ward, Sr. Environmental Specialist Signature Lynn Ward

Your certification and NMOCD approval of this application/closure does not relieve the operator of liability should the contents of the pit or tank contaminate ground water or otherwise endanger public health or the environment. Nor does it relieve the operator of its responsibility for compliance with any other federal, state, or local laws and/or regulations.

Approval:
Printed Name/Title ____ Signature ____ Date: ____

facility - fPAC0613851245 RP# 901
application - pPAC0614628592

NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON
Governor
Joanna Prukop
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

September 7, 2004

Mr. Paul Mulkey pdmulkey@duke-energy.com
Duke Energy Field Services

Re: Plan Approval, TT 112 Ext.2 **DEFS Ref. 130008**
Site Reference UL-A Sec-6 T-23S R-38E
Initial C-144 Dated: 7-30-04
Request Plan Dated: 8-24-04

Dear Mr. Mulkey,

The Remediation Work Plan Proposal submitted to the New Mexico Oil Conservation Division (OCD) by Environmental Plus, Inc. for Duke Energy Field Services is **hereby approved** for 120 days with the following considerations:

- Immediate notification if additional contamination is discovered during excavation (if missed by borehole delineation)
- 48 hour notification to OCD prior to final sampling
- Disturbed areas to be seeded for re-vegetation of native grasses and other plants and demonstrate growth within a reasonable time after site remediation operations cease

Please be advised that OCD approval of this plan does not relieve Duke Energy Field Services of responsibility should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. Additionally, OCD approval does not relieve Duke Energy Field Services of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions or need assistance please call (505) 393-6161, x111 or e-mail lwjohnson@state.nm.us

Sincerely,

Larry Johnson - Environmental Engineer

Cc:
Chris Williams - District I Supervisor
Bill Olson - Hydrologist
Paul Sheeley-Environmental Engineer
Iain Olness – EIP Project Consultant

ENVIRONMENTAL PLUS, INC. Micro-Blaze Micro-Blaze Out™
STATE APPROVED LAND FARM AND ENVIRONMENTAL SERVICES

30 August 2004

Mr. Larry Johnson
Environmental Engineer
New Mexico Oil Conservation Division
1625 North French
Hobbs, New Mexico 88240

Re: Site Investigation and Closure Proposal
Duke Energy Field Services TT 112 Ext. 2 – Reference #130008
UL A, NE¼ of the NE¼ of Section 6, Township 23 South, Range 38 East
Latitude N 32° 20' 26.47" and Longitude W 103° 5' 33.02"

Dear Mr. Johnson,

Environmental Plus, Inc. (EPI), on behalf of Mr. Paul Mulkey, Duke Energy Field Services, L.P. (DEFS), submits the enclosed *Site Investigation and Closure Proposal* for the above referenced leak site on land owned by D. K. Boyd Oil & Gas, located approximately 7.6 miles southeast of Eunice, New Mexico. The New Mexico Office of the State Engineer website database indicates there are no water supply wells within a one mile-radius of the release site. Data for wells located east of the release site indicate that the depth to groundwater is approximately 300 feet. The attached site information and metrics form ranks the site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993).

A soil boring was advanced near the center of the historical site and advanced to a depth of 25 feet below ground surface (bgs). Analytical results for the samples collected during the advancement of the soil boring indicated contamination extended to a depth of 25 feet bgs; however, contaminant concentrations were below NMOCD remedial thresholds with the exception of chloride, which was reported at concentrations ranging from 80 parts per million (ppm) to 448 ppm.

Based on field and analytical results obtained during the advancement of the soil boring, it is recommended to excavate hydrocarbon impacted soil to a depth of 10 feet bgs and dispose of the soil at an approved soil disposal facility. In addition, it is recommended that all surface features (i.e., fence, barrel and piping) be removed.

If there are any questions please call Mr. Ben Miller or myself at the office or at (505) 390-0288 and (505) 390-7306, respectively or Mr. Paul Mulkey at (505) 397-5716. All official communication should be addressed to:

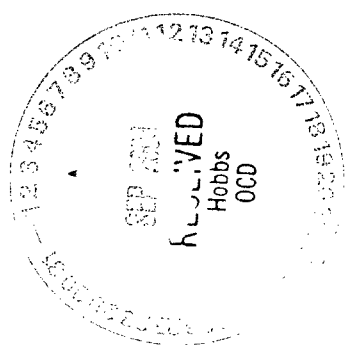
Mr. Paul Mulkey — EMAIL ?
Duke Energy Field Services
11525 West Carlsbad Highway
Hobbs, New Mexico 88240

Sincerely,

ENVIRONMENTAL PLUS, INC.

Iain Olness — E. MAIL ?

Iain Olness, P.G.
Hydrogeologist



cc: Lynn Ward, Duke Energy Field Services, w/enclosure
Paul Mulkey, Duke Energy Field Services, w/enclosure
Steve Weathers, Duke Energy Field Services, w/enclosure
D. K. Boyd, Property Owner, w/enclosure
Ben Miller, EPI Vice President and General Manager
Sherry Miller, EPI President
file

ENVIRONMENTAL PLUS, INC.

P.O. BOX 1558 ••• 2100 WEST AVE. O ••• EUNICE, NEW MEXICO 88231
TELEPHONE 505•394•3481 FAX 505•394•2601

Duke Energy Field Services

SITE INVESTIGATION AND CLOSURE PROPOSAL

TT 112 EXT. 2 RELEASE SITE

DEFS REF: 130008

UL-A (NE¼ OF THE NE¼) OF SECTION 6 T23S R38E

~7.6 MILES SOUTHEAST (141°) OF EUNICE

LEA COUNTY, NEW MEXICO

LATITUDE: N 32° 20' 26.47" LONGITUDE: W 103° 05' 33.02"

AUGUST 24, 2004

PREPARED BY:

Environmental Plus, Inc.
2100 Avenue O
P.O. Box 1558
Eunice, NM 88231
Phone: (505)394-3481
FAX: (505)394-2601

Table of Contents

FIGURES

TABLES

APPENDICES

Project Summary

Site Specific:

- **Company Name**: Duke Energy Field Services
- **Facility Name**: TT 112 Ext. 2
- **Project Reference** 130008
- **Company Contacts**: Paul Mulkey
- **Site Location:** WGS84 N32° 20' 26.47"; W103° 5' 33.02"
- **Legal Description**: Unit Letter A, (NE¼ of the NE¼), Section 6, T23S, R38E
- **General Description**: approximately 7.6-miles southeast of Eunice, New Mexico
- **Elevation**: 3,353-ft amsl **Depth to Ground Water**: >100-ft
- **Land Ownership**: D. K. Boyd Oil & Gas
- **EPI Personnel**: Project Consultant – Iain Olness
  Site Foreman – NA

Release Specific:

- **Product Released**: Natural Gas & NGL
- **Volume Released**: Unknown **Volume Recovered**: None
- **Time of Occurrence**: Historical **Time of Discovery**: 07-July-04
- **Release Source**: Historic Burn Pit
- **Initial Surface Area Affected**: 400-ft^2

Remediation Specific:

- **Final Vertical extent of contamination**: >25-ft bgs; Remaining depth to groundwater: >100-ft
- **Water wells within 1,000-ft**: 0 **Surface water bodies within 1,000-ft**: 0
- **NMOCD Site Ranking Index**: 0 points (>100-ft to top of water table)
- **Remedial goals for Soil**: TPH – 5,000 mg/kg; BTEX – 50 mg/kg; Benzene – 10 mg/kg; Chlorides – 250 mg/kg; Sulfates – 600 mg/kg
- **RCRA Waste Classification**: Exempt
- **Remediation Option Selected**: a) Removal of surface features (i.e., fence, barrel and piping); b) excavation of contaminated soil to a depth of 10 feet bgs; c) installation of a clay barrier; and d) backfilling with clean soil.
- **Disposal Facility**: EPI Landfarm (proposed) **Volume disposed of**: estimated 150 cubic yards
- **Project Completion Date**: To be determined
- **Additional Commentary**: None

1.0 Introduction & Background

This report addresses the site investigation and proposed closure guidelines of the Duke Energy Field Services (DEFS) "TT 112 Ext. 2" remediation site. On July 7, 2004, Environmental Plus, Inc. (EPI) was notified by DEFS regarding a recently discovered pit along the TT 112 line. This site is located approximately 7.6 miles southeast of Eunice, Lea County, New Mexico (*reference Figure 1*). The C-144 Form submitted to the New Mexico Oil Conservation Division (NMOCD) on July 30, 2004, reports an historic release of an unknown volume. EPI performed GPS surveying, photography and characterization of the site on July 20, 2004. The site consists of an approximate 400 square feet (ft^2) visibly affected surface area (*reference Figure 3*).

This release site is located in Unit Letter A, (NE¼ of the NE¼), Section 6, T22S, R38E, N32° 20' 26.46" and W103° 5' 33.02". The site is approximately 7.2-miles southeast of Eunice, New Mexico. The property is owned by D. K. Boyd Oil & Gas *(reference Figures 1 through 3)*.

2.0 Site Description

2.1 Geological Description

The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A. Clebsch, 1961, describes the near surface geology of southern Lea County as "an intergrade of the Quaternary Alluvium (QA) sediments, i.e., fine to medium sand, with the mostly eroded Cenozoic Ogallala (CO) formation. Typically, the QA and CO formations in the area are capped by a thick interbed of caliche and generally overlain by sandy soil."

The release site is located in the Eunice Plain physiographic subdivision, described by Nicholson & Clebsch as an area "underlain by a hard caliche surface and is almost entirely covered by reddish-brown dune sand". The thickness of the sand cover ranges from 2-5 feet in most areas to as much as 20-30 feet in drift areas.

2.2 Ecological Description

The area is typical of the Upper Chihuahuan Desert Biome consisting primarily of hummocky sand hills covered with Harvard Shin Oak (*Querqus harvardi*) interspersed with Honey Mesquite (*Prosopis glandulosa*) along with typical desert grasses, flowering annuals and flowering perennials. Mammals represented, include Orrd's and Merriam's Kangaroo Rats, Deer Mouse, White Throated Wood Rat, Cottontail Rabbit, Black Tailed Jackrabbit, Mule Deer, Bobcat, Red Fox and Coyote. Reptiles, amphibians, and birds are numerous and typical of area. A survey of Listed, Threatened, or Endangered species was not conducted.

2.3 Area Ground Water

The unconfined groundwater aquifer at this site is projected to be >100-ft bgs based on limited water depth data obtained from the New Mexico State Engineers Office data base (*reference Table 1*). Ground water gradient in this area is generally to the east-southeast.

2.4 Area Water Wells

All recorded wells are greater than 1,000 horizontal feet from the site (*reference Figure 3*).

2.5 *Area Surface Water Features*

No surface water bodies exist within 1,000 horizontal feet of the site.

3.0 NMOCD Site Ranking

Contaminant delineation and remedial work done at this site indicate that the chemical parameters of the soil and the physical parameters of the groundwater were characterized consistent with the characterization and remediation/abatement goals and objectives set forth in the following New Mexico Oil Conservation Division (NMOCD) publications:

- ***Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993)***
- ***Unlined Surface Impoundment Closure Guidelines (February 1993)***
- ***Interim Pit and Below-Grade Tank Guidelines (May 2004)***

Acceptable thresholds for contaminants/constituents of concern (CoC), i.e., TPH^{8015m}, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylenes (BTEX), were determined based on the NMOCD Ranking Criteria as follows:

- *Depth to Ground water, i.e., distance from the lower most acceptable concentration to the ground water.*
- *Wellhead Protection Area, i.e., distance from fresh water supply wells.*
- *Distance to Surface Water Body, i.e., horizontal distance to all down gradient surface water bodies.*

Based on the proximity of the site to protectable area water wells, surface water bodies, and depth to groundwater from the lower most contamination, the NMOCD ranking score for the site is 0 points with the soil remedial goals highlighted in the Site Ranking table presented below.

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water
Depth to GW <50 feet: *20 points*	If <1,000' from water source, or; <200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
Depth to GW 50 to 99 feet: *10 points*		200-1,000 horizontal feet: *10 points*
Depth to GW >100 feet: 0 points	If >1,000' from water source, or; >200' from private domestic water source: *0 points*	>1,000 horizontal feet: *0 points*
Ground Water Score = 0	Wellhead Protection Score= 0	Surface Water Score= 0
Site Rank (1+2+3) = 0 + 0 + 0 = 0 points (for soil 0-120'-bgs)		

Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	20 or >	10	0
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm

[1] A field soil vapor headspace measurement of 100 ppm may be substituted for a laboratory analysis of the benzene and BTEX concentration limits.

4.0 Subsurface Soil Investigation

The vertical extent of hydrocarbon contamination at the site was determined by advancing a soil boring near the center of the pit (reference Photograph #4) to a depth of 25 feet bgs on July 30, 2004. Soil samples were collected from the surface, 5 feet, 10 feet, 15 feet, 20 feet and 25 feet below ground surface (bgs). A portion of the samples were immediately placed in laboratory provided containers and placed on ice. The remainder of the samples was placed in a Ziploc bags for field analysis for the presence of organic vapors. Organic vapor concentrations were measured in the field utilizing an UltraRae PID equipped with a 10.6 eV lamp. Organic vapor concentrations ranged from 28.5 parts per million (ppm) to 54.6 ppm (*reference Table 2*).

The soil samples collected from the surface, 15 feet bgs, 20 feet bgs and 25 feet bgs were submitted to Cardinal Laboratories of Hobbs, New Mexico. The samples were submitted for quantification of gasoline range organics (GRO) and diesel range organics (DRO) via EPA Method 8015M and benzene, toluene, ethylbenzene and total xylenes (BTEX) via EP Method 8260 as listed in EPA publication SW-846. In addition, the samples were submitted for quantification of chlorides via Standard Method 4500 Cl^-B and sulfates via EPA Method 375.4 as listed in EPA publication 600/4-79-020.

Analytical results for the sample collected from the surface indicated TPH concentrations of 13,057 milligrams per kilogram (mg/Kg), above the NMOCD remedial threshold of 5,000 mg/Kg. All other analytes were reported as non-detectable (ND) at or above each analytes respective method detection limit (MDL) or below the NMOCD remedial thresholds *(reference Table 2)*.

Analytical results for the remaining three samples (i.e., 15, 20 and 25 feet bgs) were reported as either ND at or above each analytes respective MDL or below NMOCD remedial thresholds for all analytes. The only exception was chloride, which was reported at concentrations ranging from 288 mg/Kg to 448 mg/Kg with an average concentration of 357 mg/Kg (*reference Table 2*).

5.0 Closure Proposal

Based on field and analytical results obtained during the advancement of the soil boring at the site, it is recommended to excavate hydrocarbon impacted soil to a depth of 10 feet bgs and dispose of the soil at an approved soil disposal facility. Upon completion of the excavation, soil samples will be collected from the sidewalls and base of the excavation and submitted for quantification of GRO, DRO and BTEX to verify contaminant concentrations are below the NMOCD remedial thresholds.

Due to the fact that chloride levels exceed the NMOCD remedial threshold of 250 mg/Kg, it is recommended that a clay barrier be installed in the base of the excavation upon receipt of the analyses confirming TPH and BTEX concentrations are below NMOCD remedial thresholds. The placement of the barrier will prevent the migration of chloride and prevent impacts to the aquifer situated >100 feet bgs.

Based on the data presented in this report, Environmental Plus, Inc., on behalf of Duke Energy Field Services, requests that the NMOCD issue a *Closure Proposal Approval Letter*. Upon receipt of the letter, excavation activities will commence.

FIGURES

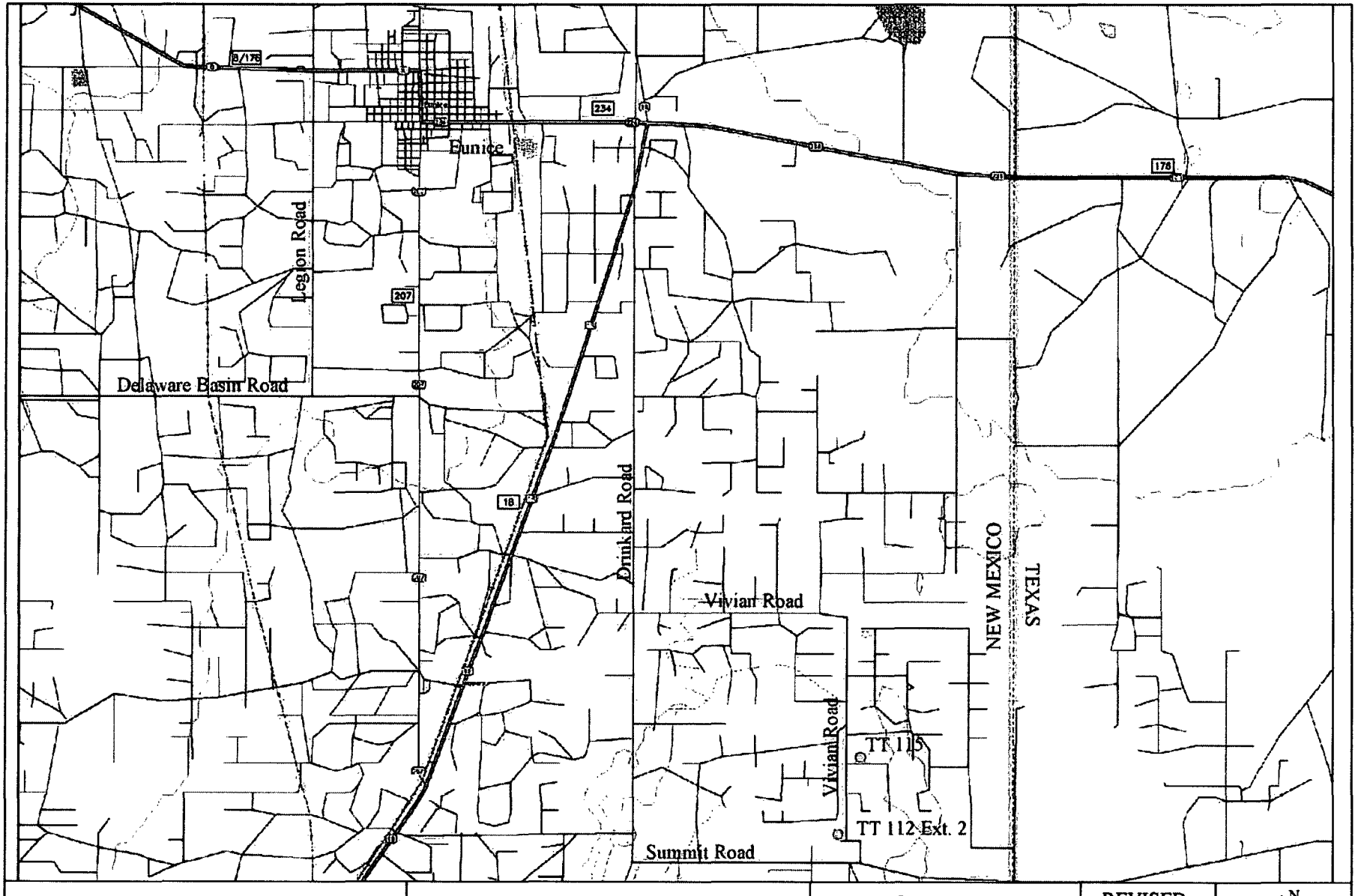


Figure 1 Area Map Duke Energy Field Services TT 112 Ext. 2	Lea County, New Mexico NE 1/4 of the NE 1/4, Sec. 6, T23S, R38E N 32° 20' 26.5" W 103° 05' 33.0" Elevation: 3,353 feet amsl	DWG By: Iain Olness July 2004	REVISED:
		0 1.25 2.5 Miles	SHEET 1 of 1

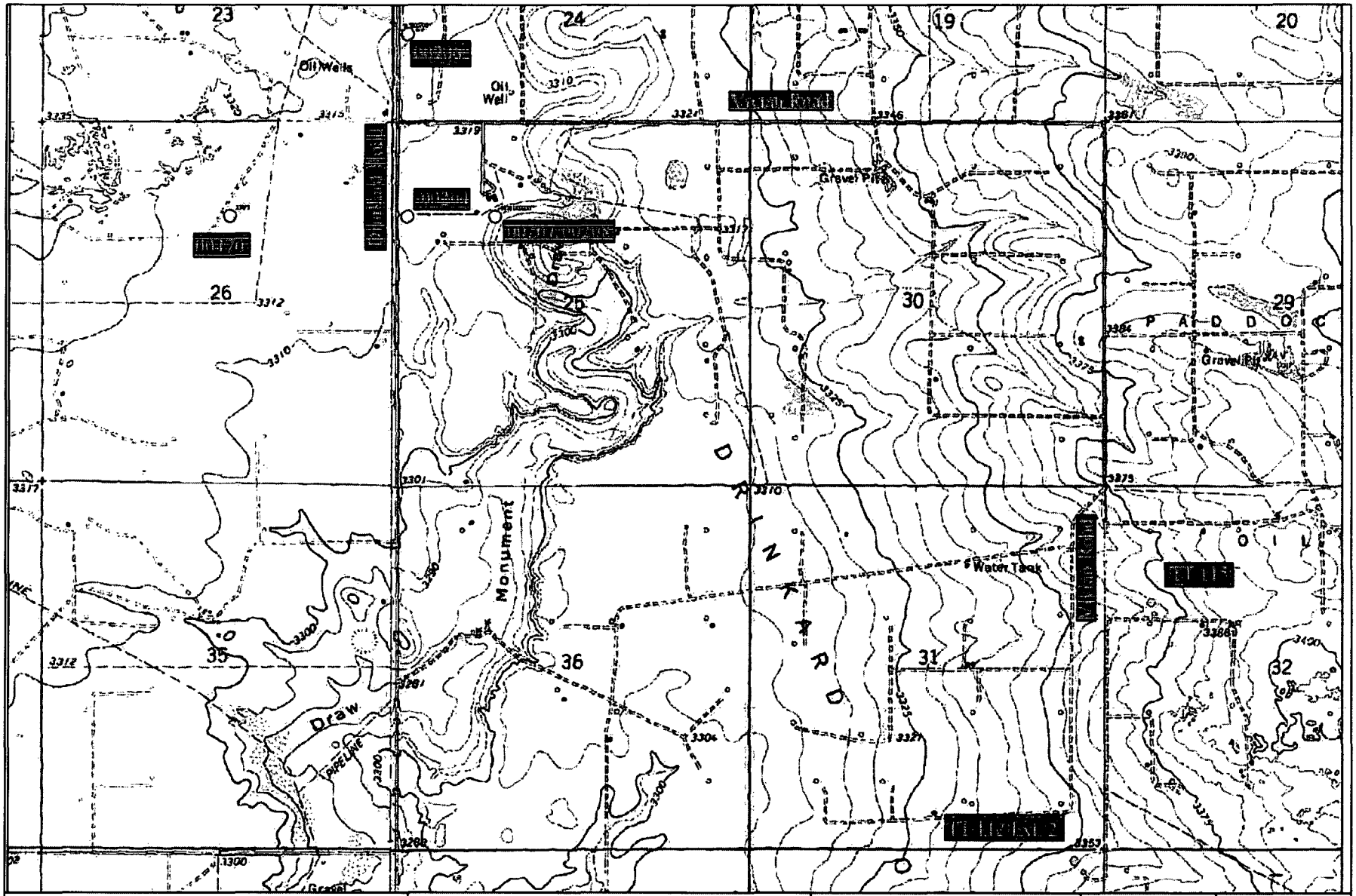


Figure 2 Site and Well Location Map Duke Energy Field Services TT 112 Ext. 2	Lea County, New Mexico NE 1/4 of the NE 1/4, Sec. 6, T23S, R38E N 32° 20' 26.5" W 103° 05' 33.0" Elevation: 3,353 feet amsl	DWG By: Iain Olness July 2004 0 2,000 4,000 Feet	REVISED: SHEET 1 of 1

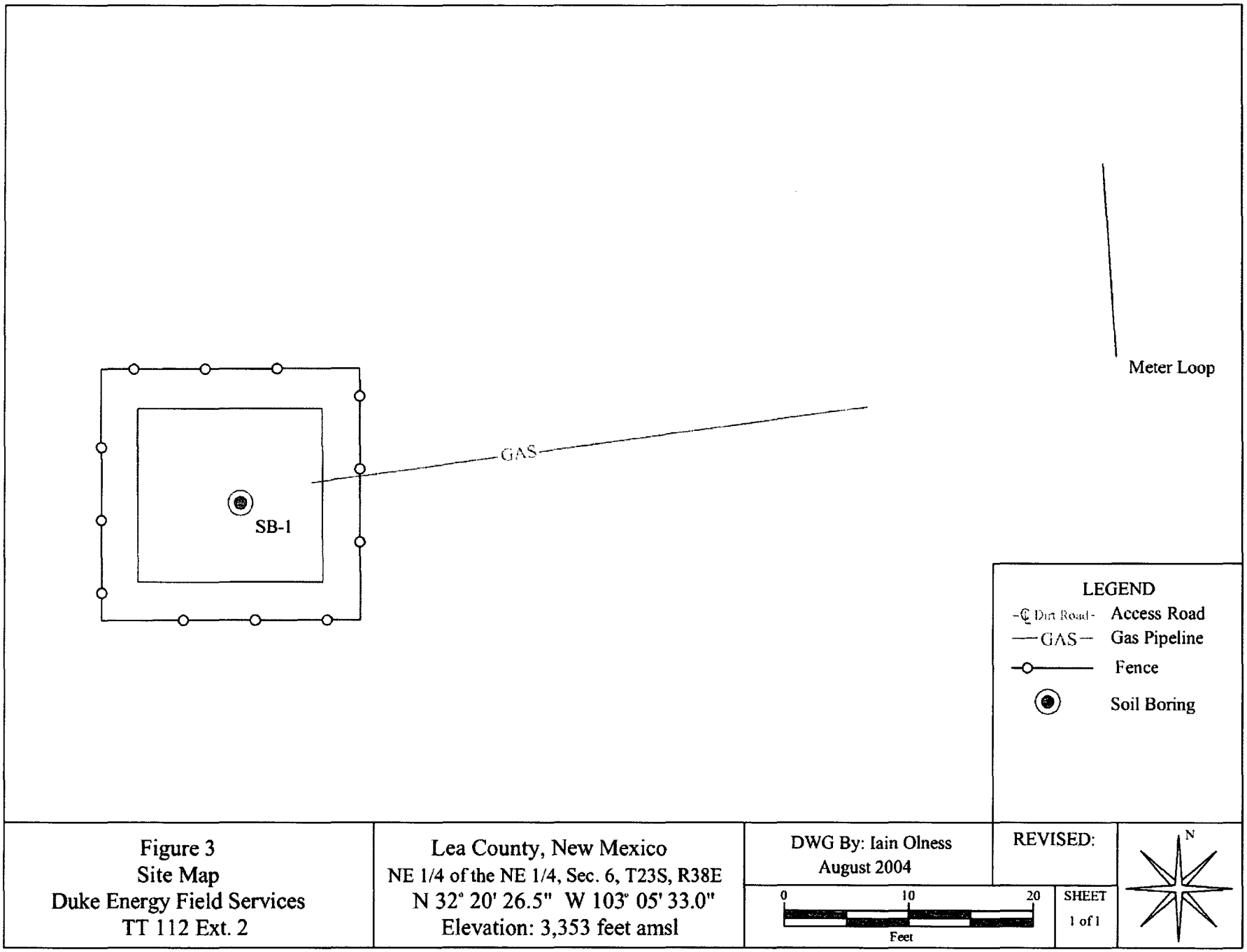


Figure 3 Site Map Duke Energy Field Services TT 112 Ext. 2	Lea County, New Mexico NE 1/4 of the NE 1/4, Sec. 6, T23S, R38E N 32° 20' 26.5" W 103° 05' 33.0" Elevation: 3,353 feet amsl	DWG By: Iain Olness August 2004	REVISED: SHEET 1 of 1

TABLES

TABLE 1

WELL / SURFACE DATA REPORT - 07/21/04*

Duke Energy Field Services TT 112 Ext. 2 - Ref. #130008

DB	File Nbr	Use	Diversion[A]	Owner	Well Number	Source	Twsp	Rng	Sec q q q	Latitude	Longitude	Start Date	Finish Date	Depth of Well (ft bgs)	Depth to Water (ft bgs)
CP	00687	DOM	3	Linebery	CP 00687	Shallow	23S	38E	08 2 1	N 32° 19' 20.6"	W 103° 4' 55.31"		1-Oct-85	400	335
CP	00688	DOM	3	Tom Linebery	CP 00688	Shallow	23S	38E	20 4 4	N 32° 16' 56.91"	W 103° 4' 40"		1-Oct-85	335	265
CP	00190	DOM	0	George W. Sims	CP 00190		22S	38E	07 3 1 1	N 32° 24' 9.34"	W 103° 6' 27.43"				
CP	00192	DOM	0	George W. Sims	CP 00192		22S	38E	20 1 1 3	N 32° 22' 51.13"	W 103° 5' 25.96"				
CP	00193	DOM	0	George W. Sims	CP 00193		22S	38E	07 3 1 1	N 32° 24' 9.34"	W 103° 6' 27.43"				
CP	00470	PRO	0	Capitain Drilling Co., Inc.	CP 00470	Shallow	22S	37E	26 2 1 2	N 32° 21' 59.05"	W 103° 7' 59.95"	3-Dec-68	3-Dec-68	99	65
CP	00561	STK	3	Della M. Ferguson	CP 00561	Shallow	22S	37E	34 3 3 3	N 32° 20' 27.5"	W 103° 9' 31.85"	26-Dec-76	29-Dec-76	137	60
CP	00706	DOM	3	Billie Spear	CP 00706	Shallow	22S	37E	24 1 1 3	N 32° 22' 25.06"	W 103° 7' 29.1"	29-Dec-86	31-Dec-86	96	60
CP	00204	DOM	0	Amanda B. Sims	CP 00204		22S	37E	25 3 1 4	N 32° 21' 59"	W 103° 7' 29.1"				
CP	00207	DOM	0	A.S.M. Drinkard	CP 00207		22S	37E	25 1 2 3	N 32° 21' 58.97"	W 103° 7' 13.69"				
CP	00208	DOM	0	A.S.M. Drinkard	CP 00208		22S	37E	25 1 2 3	N 32° 21' 58.97"	W 103° 7' 13.69"				
CP	00187	DOM	0	George W. Sims	CP 00187		22S	37E	24 1 1 3	N 32° 22' 38.1"	W 103° 7' 29.1"				

* = Data obtained from the New Mexico Office of the State Engineer Website (http://iwaters.ose.state.nm.us:7001/iWATERS/wr_RegisServlet1)
Shaded well information indicates well location shown on Figure 3

[A] = in acre feet per annum
PRO = Prospecting or Development of Natural Resource
DOM = Domestic One Household
STK = Stock Well
(quarters are 1=NW, 2=NE, 3=SW, 4=SE)
(quarters are biggest to smallest - X Y are in Feet - UTM are in Meters)

TABLE 2

SUMMARY OF SOIL BORING ANALYTICAL RESULTS

Duke Energy Field Services TT 112 Ext. 2- Ref. #130008

Sample ID	Sample Date	Sample Depth (feet)	Field Analyses (ppm)	Benzene (µg/Kg)	Toluene (µg/Kg)	Ethyl-benzene (µg/Kg)	Total Xylenes (µg/Kg)	Total BTEX (µg/Kg)	TPH (as gasoline) (mg/Kg)	TPH (as diesel) (mg/Kg)	Total TPH (mg/Kg)	Chloride (mg/Kg)	Sulfate (mg/Kg)
DETT112EXT2073004-Topsoil	30-Jul-04	Topsoil	28.5	<5.0	<5.0	147	675	822	357	12,700	**13,057**	80	91
DETT112EXT2073004-5'	30-Jul-04	5	45.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DETT112EXT2073004-10'	30-Jul-04	10	54.3	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DETT112EXT2073004-15'	30-Jul-04	15	54.6	<5.0	<5.0	10	32	42	<10.0	658	658	**288**	212
DETT112EXT2073004-20'	30-Jul-04	20	39.4	<5.0	<5.0	<5.0	<0.015	0.0	<10.0	266	266	**448**	383
DETT112EXT2073004-25'	30-Jul-04	25	33.2	<5.0	<5.0	7.0	22	29	<10.0	326	326	**336**	214
NMOCD Remedial Thresholds				**10,000**				**50,000**			**5,000**	**250**	**600**

[1] *Red, bolded values are in excess of the NMOCD Remediation Thresholds*

[2] *NA : Not Analyzed*

[3] *NS : Not Sampled*

APPENDIX I

PROJECT PHOTOGRAPHS

Photo #1: Burn pit, looking northerly.

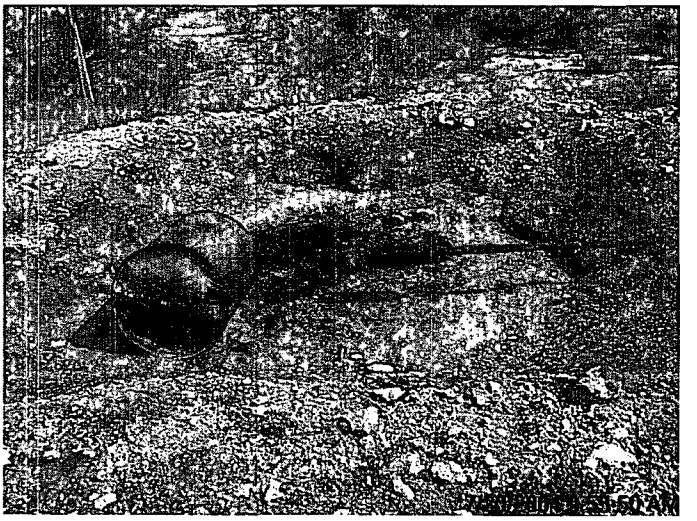


Photo #2: Burn pit, looking northerly.

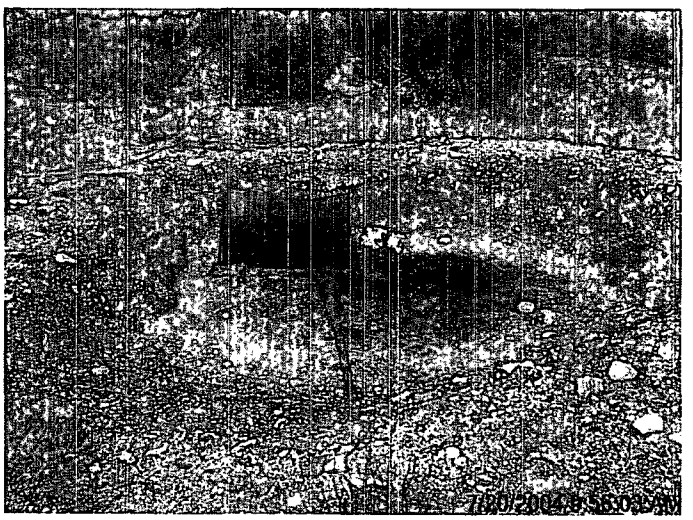


Photo #3: Barrel in burn pit, looking westerly.

APPENDIX II

ANALYTICAL RESULTS

AND

CHAIN-OF-CUSTODY FORMS

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: IAIN OLNESS
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 07/30/04
Reporting Date: 08/03/04
Project Number: 130008
Project Name: DEFS TT112 EXT. 2
Project Location: NOT GIVEN

Sampling Date: NOT GIVEN
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: BC

LAB NO. SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:	08/02/04	08/02/04	08/02/04	08/02/04	08/02/04	08/02/04
H8963-1 DETT112EXT2073004TOPSOIL	357	12700	<0.005	<0.005	0.147	0.675
H8963-2 DETT112EXT2073004 15'	<10.0	658	<0.005	<0.005	0.010	0.032
H8963-3 DETT112EXT2073004 20'	<10.0	266	<0.005	<0.005	<0.005	<0.015
Quality Control	785	749	0.086	0.101	0.091	0.273
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	98.1	93.7	86.4	101	91.1	91.0
Relative Percent Difference	0.6	2.2	7.3	3.0	0.5	2.7

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8260.

Burgess J. A. Cooke, Ph.D.

8/3/04
Date

H8963A.XLS

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: IAIN OLNESS
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 07/30/04
Reporting Date: 08/03/04
Project Number: 130008
Project Name: DEFS TT112 EXT. 2
Project Location: NOT GIVEN

Sampling Date: NOT GIVEN
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: HM
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE:		08/03/04	08/03/04
H8963-1	DETT112EXT2073004TOPSOIL	91	80
H8963-2	DETT112EXT2073004 15'	212	288
H8963-3	DETT112EXT2073004 20'	383	448
Quality Control		48.21	1000
True Value QC		50.00	1000
% Recovery		96.4	100
Relative Percent Difference		6.2	1.0

METHODS:	EPA 600/4-79-02	375.4	SM 4500-Cl B

Note: Analyses performed on 1:4 w:v aqueous extracts.

Amy Hill
Chemist

8/3/04
Date

Cardinal Laboratories Inc.

2111 Beechwood, Abilene, TX 79603 — 915-673-7001 Fax 915-673-7020
101 East Marland, Hobbs, NM 88240 — 505-393-2326 Fax 505-393-2476

Company Name	Environmental Plus Inc.
Project Manager	Iain Olness
Address	
City, State, Zip	
Phone#/Fax#	
Project #/Owner	130008
Project Name	DEFS TTIR2 Ext. 2
Project Location	
Sampler Name	Manuel Gonzales

Bill To

Environmental Plus Inc.

Analysis Request

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	MATRIX: WASTEWATER	MATRIX: SOIL	MATRIX: CUDE OIL	MATRIX: SLUDGE	MATRIX: OTHER:	PRESERV.: ACID/BASE	PRESERV.: ICE/COOL	PRESERV.: OTHER	SAMPLING: DATE	SAMPLING: TIME	BTEX 8021B	TPH8015M	Cl	TDS	Sulfate
H8963-1	DETTIREXT2073004Topsoil	X	1			X					X				X	X	X		X
-2	DETTIREXT207300415'	X	1			X					X				X	X	X		X
-3	DETTIREXT2073004 20'	X	1			X					X				X	X	X		X

Sampler Relinquished: Iain Olness	7/30/04 Time 8 40	Received By:	Fax Results To Iain Olness 505-394-2601
Relinquished by:	Date 7/30/04 Time 17:41	Received By: (lab staff) Hope D. Morgan	Remarks
Delivered by Sampler	Sample Cool & Intact (Yes) No	Checked By:	

CARDINAL LABORATORIES

PHONE (325) 673-7001 · 2111 BEECHWOOD · ABILENE, TX 79603
PHONE (505) 393-2326 · 101 E. MARLAND · HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: IAIN OLNESS
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 08/03/04
Reporting Date: 08/05/04
Project Number: 130008 (DEFS)
Project Name: TT 112 EXT. 2
Project Location: NOT GIVEN

Sampling Date: 07/30/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

LAB NO. SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:	08/03/04	08/03/04	08/04/04	08/04/04	08/04/04	08/04/04
H8972-1 DETT112EXT207300425'	<10.0	326	<0.005	<0.005	0.007	0.022
Quality Control	759	801	0.092	0.103	0.095	0.294
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	94.9	100	92.4	103	94.9	98.1
Relative Percent Difference	5.0	1.8	6.5	2.8	4.0	7.2

METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8260.

Burgess J. A. Cooke Ph. D.

8/5/04
Date

H8972A.XLS

CARDINAL LABORATORIES

PHONE (325) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.
ATTN: IAIN OLNESS
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

Receiving Date: 08/03/04
Reporting Date: 08/05/04
Project Number: 130008 (DEFS)
Project Name: TT112 EXT. 2
Project Location: NOT GIVEN

Sampling Date: 07/30/04
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: HM

LAB NUMBER	SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE:		08/04/04	08/04/04
H8972-1	DETT112EXT207300425'	214	336
Quality Control		48.21	1000
True Value QC		50.00	1000
% Recovery		96.4	100
Relative Percent Difference		6.2	1.0

METHODS:	EPA 600/4-79-02	375.4	SM 4500-Cl⁻ B

Note: Analyses performed on a 1:4 w:v aqueous extract.

Amy Hill
Chemist

8/5/04
Date

Cardinal Laboratories Inc.

101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

2111 Beechwood, Abilene, TX 79603
915-673-7001 Fax 915-673-7020

Company Name	Environmental Plus, Inc.
EPI Project Manager	Iain Olness
Billing Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
EPI Phone#/Fax#	505-394-3481 / 505-394-2601
Client Company	DEFS
Facility Name	TT 112 Ext. 2
Project Reference	130008
EPI Sampler Name	Manuel Gonzales

Bill To

ANALYSIS REQUEST

LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV.: ACID/BASE	ICE/COOL	OTHER	SAMPLING: DATE	TIME	BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES ($SO_4^{=}$)	pH	TCLP	OTHER >>>
H6472-1 1	DETT112EXT207300425'	X				X					X		30-Jul	12:46	X	X	X	X			
2																					
3																					
4																					
5																					
6																					
7																					
8																					
9																					
10																					

Sampler Relinquished: Iain Olness	Date: 8/3/04 Time: 1635	Received By:	Fax Results To Iain Olness 505-394-2601
Relinquished by:	Date / Time	Received By: (lab staff) Barry Hoffacker	REMARKS:
Delivered by:	Sample Cool & Intact: Yes / No	Checked By:	

APPENDIX III

NMOCD C-144 FORM
AND
SITE INFORMATION AND METRICS FORM

Duke Energy Field Services Site Information and Metrics	**Incident Date:** Historical	**NMOCD Notified:** Not Applicable

Site: TT 112 Ext. 2	**Assigned Site Reference #:** 130008
Company: Duke Energy Field Services	
Street Address:	
Mailing Address: 11525 West Carlsbad Highway	
City, State, Zip: Hobbs, New Mexico 88240	
Representative: Paul Mulkey	
Representative Telephone: (505) 397-5716	
Telephone:	
Fluid volume released (bbls): Unknown	**Recovered (bbls):** 0 barrels
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days. (Also applies to unauthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-141 within 15 days (Also applies to unauthorized releases of 50-500 mcf Natural Gas)	
Leak, Spill, or Pit (LSP) Name: TT 112 Ext. 2	
Source of contamination: Historic Burn Pit	
Land Owner, i.e., BLM, ST, Fee, Other: D. K. Boyd Oil & Gas	
LSP Dimensions: 20 feet by 20 feet	
LSP Area: ≈400 ft^2	
Location of Reference Point (RP):	
Location distance and direction from RP:	
Latitude: N 32° 20' 26.46914"	
Longitude: W 103° 5' 33.02253"	
Elevation above mean sea level: 3,353	
Feet from South Section Line:	
Feet from West Section Line:	
Location- Unit or ¼¼: NE¼ of the NE¼	**Unit Letter:** A
Location- Section: 6	
Location- Township: T23S	
Location- Range: R38E	
Surface water body within 1000 ' radius of site: none	
Domestic water wells within 1000' radius of site: none	
Agricultural water wells within 1000' radius of site: none	
Public water supply wells within 1000' radius of site: none	
Depth from land surface to ground water (DG): >100' below ground surface	
Depth of contamination (DC): >25'	
Depth to ground water (DG – DC = DtGW): >100'	

1. Ground Water	**2. Wellhead Protection Area**	**3. Distance to Surface Water Body**
If Depth to GW <50 feet: *20 points*	If <1,000' from water source, or, <200' from private domestic water source: *20 points*	<200 horizontal feet: *20 points*
If Depth to GW 50 to 99 feet: *10 points*		200-100 horizontal feet: *10 points*
If Depth to GW >100 feet: *0 points*	If >1,000' from water source, or, >200' from private domestic water source: *0 points*	>1,000 horizontal feet: *0 points*
Ground water Score = 0	*Wellhead Protection Area Score= 0*	*Surface Water Score= 0*
Site Rank (1+2+3) = 0		

Total Site Ranking Score and Acceptable Concentrations

Parameter	>19	10-19	0-9
Benzene[1]	10 ppm	10 ppm	10 ppm
BTEX[1]	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm

[1]100 ppm field VOC headspace measurement may be substituted for lab analysis