DUKE ENERGY FIELD SERVICES

IRP-47
9/15/05

Duke Energy Field Services

SITE INVESTIGATION, REMEDIATION, AND FINAL C-141 CLOSURE DOCUMENTATION

N-LINE RELEASE SITE

DEFS REF: N-LINE 111402

UL-M (SW¼ OF THE SW¼) OF SECTION 12 T20S R37E

~4.27 MILES SOUTH-SOUTHEAST (131.8°) OF MONUMENT

LEA COUNTY, NEW MEXICO

LATITUDE: 32°34'57.96"N LONGITUDE: 103°12'35.28"W

FEBRUARY 24, 2003

PREPARED BY: JCG

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

February 24, 2003

Mr. Larry Johnson
Energy, Minerals, and Natural Resources Department
New Mexico Oil Conservation Division
1625 North French Dr.
Hobbs, New Mexico 88240

Subject: Duke Energy Field Services – N-Line 111402 Final C-141 and Closure Documentation

Dear Mr. Johnson:

Environmental Plus, Inc. (EPI), on behalf of Duke Energy Field Services (DEFS) submits for your consideration and approval the Final C-141 and Closure Documentation for the "N-Line 111402" remediation site. This report documents the vertical and horizontal extents of hydrocarbon contamination at the site, removal of contaminated soils above acceptable CoC levels and disposal of said contaminated soils at a NMOCD approved land farm. This submittal is consistent with the Initial C-141 and Remediation Plan submitted to NMOCD on November 15, 2002. Therefore, on behalf of Duke Energy Field Services, EPI requests that the NMOCD consider the information provided within this documentation and require "no further action" at this site.

If there are any questions please call Mr. Ben Miller or myself at EPI's offices, or at 505-390-0288 or 505-390-9804 respectively. Mr. Paul Mulkey of Duke Energy Field Services can be contacted at 505-397-5716.

Please address all official correspondence regarding this release to Mr. Paul Mulkey at:

Duke Energy Field Services
11525 West Carlsbad Highway
Hobbs, New Mexico 88240

Sincerely,

John Good

John Good, Environmental Consultant

cc: Paul Mulkey, Duke Energy Field Services, Hobbs, w/enclosure
Lynn Ward, Duke Energy Field Services, Midland, w/enclosure
Steve Weathers, Duke Energy Field Services, Denver, w/enclosure
Sherry Miller, President, Environmental Plus, Inc.
Ben Miller, Vice President/General Manager, Environmental Plus, Inc.
Pat McCasland, EPI Technical Manager, Environmental Plus, Inc.
File

ENVIRONMENTAL PLUS, INC.

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Executive Summary

Environmental Plus, Inc. (EPI) was notified by Duke Energy Field Services (DEFS) on November 14, 2002 regarding a pipeline release site involving DEFS' "N-Line" natural gas gathering pipeline. DEFS' initial C-141 (15-Nov) indicates a natural gas liquid (NGL) release of 20-bbl, with recovery of 10-bbl. The leak was a result of internal pipeline corrosion. DEFS personnel initially repaired the steel pipeline by clamping, and ultimately replaced the pipeline.

Characterization and remedial work by EPI commenced on November 14, 2002 and was completed on December 31, 2002. The "N-Line 111402" site is located ~4.27-miles southeast (131.8°) of Monument, NM, in Unit Letter M, (SW¼ of the SW¼), Section 12, T20S, R37E, (N32°34'57.96" and W103°12'35.28"). The spill occurred on property owned by Trent Stradley, d.b.a SW Cattle Company, PO. Box 1800, Hobbs, NM 88240. The original surface extent of the reported spill was approximately 3,100-ft^2, however, ultimately was expanded to ~7,500-ft^2 *(see Plates 3A and 3B in the Attachments)* The vertical extent of contamination extended to 20-ft below ground surface (bgs).

EPI excavated and disposed of 3,410-yd^3 of contaminated soil from the site commencing on 14-Nov. Composite bottom-hole and sidewall soil samples were submitted to Cardinal Laboratories, Hobbs, NM on December 10 and 19, 2002. Results of these analyses confirmed that TPH, BTEX, and Benzene levels were below threshold levels throughout the site.

All contaminated soil removed from the site was disposed of at the NMOCD approved J&L Land Farm. The excavation was backfilled with clean caliche and topsoil purchased from the landowner. The site was contoured to prevent pooling over the excavation sites. The surface damaged area beyond road or pipeline rights-of-way will be evaluated for new vegetative growth in Spring-2003 and reseeded with natural grasses if determined necessary.

1.0 Introduction

This report addresses the site investigation and remediation of the DEFS "N-Line 111402" natural gas gathering line remediation site. On November 14, 2002, EPI was notified by DEFS regarding a natural gas and associated NGL release at this site. The initial C-141 Form submitted to NMOCD (November 15, 2002) reports the release volume (NGL) as 20 bbl with 10 bbl recovered. EPI responded the same day (11-14-02) and commenced GPS delineation, photography, characterization and preliminary excavation of the contaminated soil in the immediate area of the reported leak. The site initially consisted of an elongated ~2,700-ft^2 area emanating from the Point of Release and progressing southwesterly along the pipeline right-of-way. During excavation of the site, a second release point was discovered ~50-ft SW of the first POR. Ultimately, an excavation of 7,500-ft2 and 20-ft depth was necessary to achieve remedial goals at this site. *(See Plates 3A and 3B).* Remediation of this release site consisted of excavation and disposal of contaminated soil at J&L Land Farm, soil analyses, backfill and contouring of the excavation. Remediation of the site was completed on December 31, 2002.

2.0 Background

The site is associated with the DEFS N-Line natural gas gathering pipeline. This release site is located in Unit Letter M, (SW¼ of the SW¼), Section 12, T20S, R37E, (N32°34'57.96" and W103°12'35.28"), and approximately 4.27 miles south-southeast (131.8°) of Monument, NM. Trent Stradley, d.b.a. SW Cattle Company, P.O. Box 1800, Hobbs, NM 88240, owns the property. A site location map, site topographical map and detailed GPS site diagrams are included in the Attachments as Plates 1, 2 and 3A-B.

The natural gas and associated NGL release at this site was discovered and reported on November 14, 2002. The leak was the result of internal pipe corrosion. The pipe was initially clamped and repaired by DEFS personnel, and then ultimately removed and replaced.

3.0 Site Description

3.1 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 just north of the Mescalero Ridge, which marks the southern boundary of the High Plains physiographic subdivision, described by Nicholson & Clebsch as an area "capped by a thick layer of resistant caliche, locally called caprock." The High Plains surface is uniformly flat and slopes ~17-ft per mile east-southeast.

3.2 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 Rat, 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.

3.3 Area Ground Water

The unconfined ground water aquifer at this site is projected to be ~60-ft bgs. The site is located in the extreme southern edge of the High Plains (Llano Estacado) physiographic area approximately 4.25-miles southeast of Monument, NM. Water Column Reports for a 5-mile radius from the site obtained from the NM State Engineers Office *(see Plate 4 and Table 1)*. This data was utilized to generate a "Surfer" plot (*Plate 5*) of the water table elevation within a ~5-mile radius of the site. Ground water gradient in this area is generally to the southeast.

3.4 Area Water Wells

All recorded wells are greater than 1000 horizontal feet from the site.

3.5 Area Surface Water Features

No surface water bodies exist within 1000 horizontal feet of the site.

4.0 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 ground water 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)***

Acceptable thresholds for contaminants/constituents of concern (CoCs), i.e., TPH^{8015m}, Benzene, and the mass sum of Benzene, Toluene, Ethyl Benzene, and total Xylenes (BTEX), was 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 ground water from the lower most contamination, the NMOCD ranking score for the site is 20 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 <1000' 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*		**200-1000 horizontal feet: *10 points***
Depth to GW >100 feet: 0 points	**If >1000' from water source, or; >200' from private domestic water source: *0 points***	**>1000 horizontal feet: *0 points***
Ground Water Score = 20	**Wellhead Protection Score= 0**	**Surface Water Score= 0**
Site Rank (1+2+3) = 20 + 0 + 0 = 20 points (for soil 0-9'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**	1000 ppm	5000 ppm

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

5.0 Subsurface Soil Investigation

The initial subsurface soil-sampling event at this site was on December 10, 2002. Two boreholes were drilled on either side of the N-Line pipeline immediately adjacent to the second POR, and composite samples were obtained from the bottom (18-ft) of the "North" excavation and (11-ft) of the "East" excavation areas (see *Plate 3B*). Results of these 12-10-02 samples indicated that both the "West" and "East" excavations needed extension down to ~20-ft bgs to achieve remedial goals

for this site. The two areas of concern (West and North) were extended down to 20-ft bgs and composite sampled again on 12-19-02. Analyses results indicated that remedial goals in these two areas were achieved. Due to the benching and sloping requirements for an excavation of this size and depth, considerable clean soil was removed from the sidewalls to achieve engineering standards, thus sidewall contamination was not an issue with this site. *Plate 6* is a summary table of the soil analysis results, and *Plate 7* is a bar-chart representation of this data. Benzene results were never above detection limits (0.005 mg/kg), thus no chart is presented.

6.0 Ground Water Investigation

The projected depth to ground water at this site is 60-ft bgs. Excavation of the site was to a maximum depth of 20-ft. Final CoC levels of the bottom-hole of the excavation were confirmed to be below detection levels for TPH, Benzene, and BTEX. Chlorides and sulfates were analyzed during the initial 12-10-02 sampling, and found to be of no concern at this site.

The excavation was backfilled with clean caliche and topsoil obtained from the property owner. Based on the removal the Constituents of Concern and adequate depth to ground water, there will be no need for further ground water investigation at this site.

7.0 Remediation

Remediation of the site commenced on November 14, 2002 and continued through December 31, 2002. Remediation of the site consisted of excavation and disposal of 3410 yd^3 of contaminated soil from the site. All contaminated soil removed from the site was disposed of in the NMOCD approved J&L land farm located south of Hobbs, NM. The excavation was backfilled up to 3-feet below surface level with clean caliche purchased from the landowner. The top 3-ft level of the excavation was backfilled with clean topsoil that had been stockpiled during the excavation process.

The excavation was borehole and composite sampled on December 10, 2002. Results of the analyses indicated that two areas needed further excavation depth to achieve remedial goals. After further excavation, the areas were re-sampled and achieved remedial goals.

The surface damaged area of the project was determined by GPS to be 23,450-ft^2. Re-seeding of the area will be evaluated in the Spring of 2003.

8.0 Closure Justification

This report documents successful implementation of the Remediation Plan approved by NMOCD for this release site. Soil contaminated above acceptable CoC remedial concentrations was excavated and removed from the location. Disposal of RCRA exempt contaminated soils was at the J&L approved land farm. The excavation was backfilled with clean caliche and topsoil and properly contoured to provide adequate drainage. Based on the data presented in this report, Environmental Plus, Inc., on behalf of Duke Energy Field Services, requests that the NMOCD require "no further action" at this site.

ATTACHMENTS

Plate 1: Site Location Map

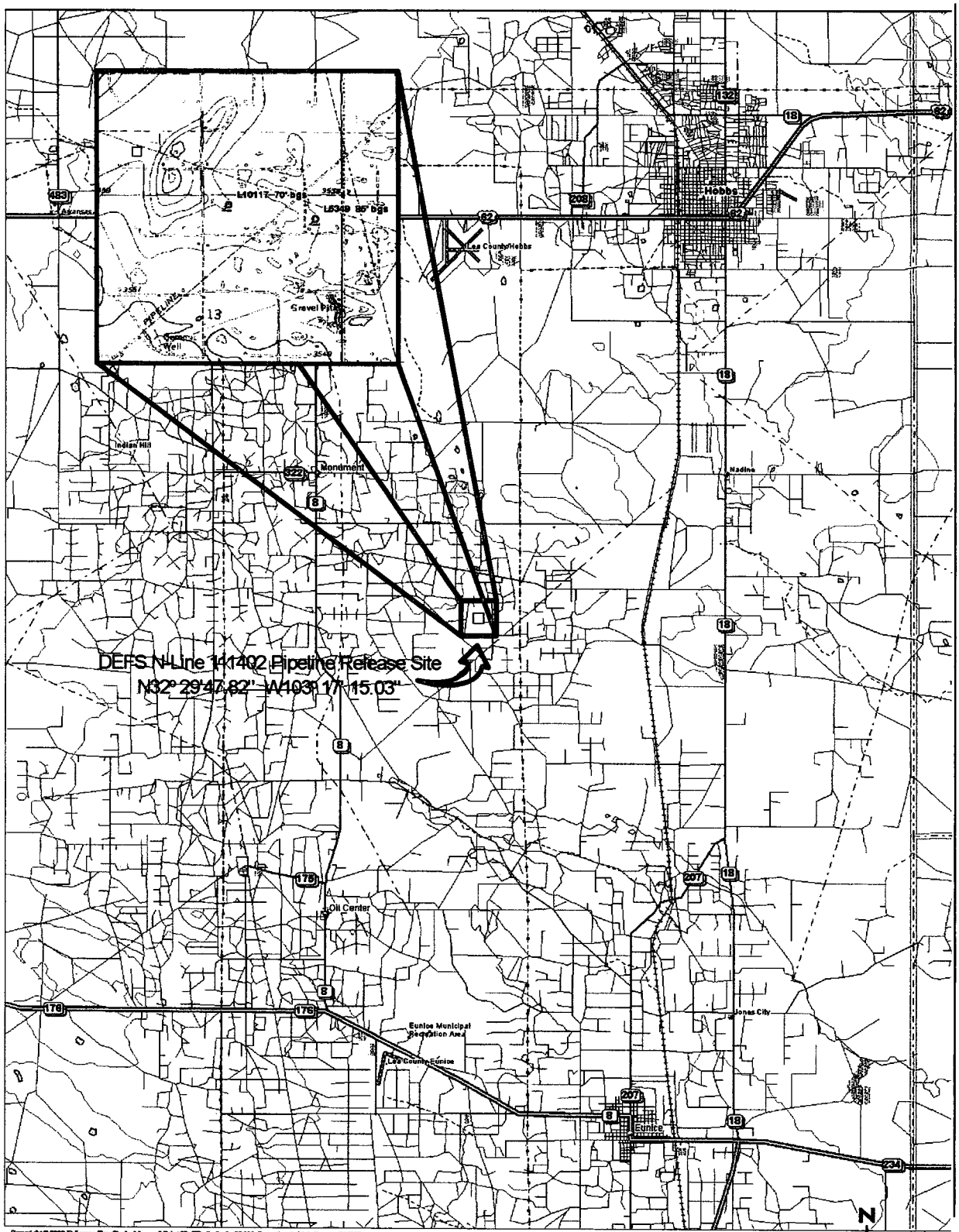


Plate 1: Release Site Location

Duke Energy Field Services - N-Line 111402

Lea County, NM; UL-M Section 12 T20S R37E

Plate 2: Site Topography Map

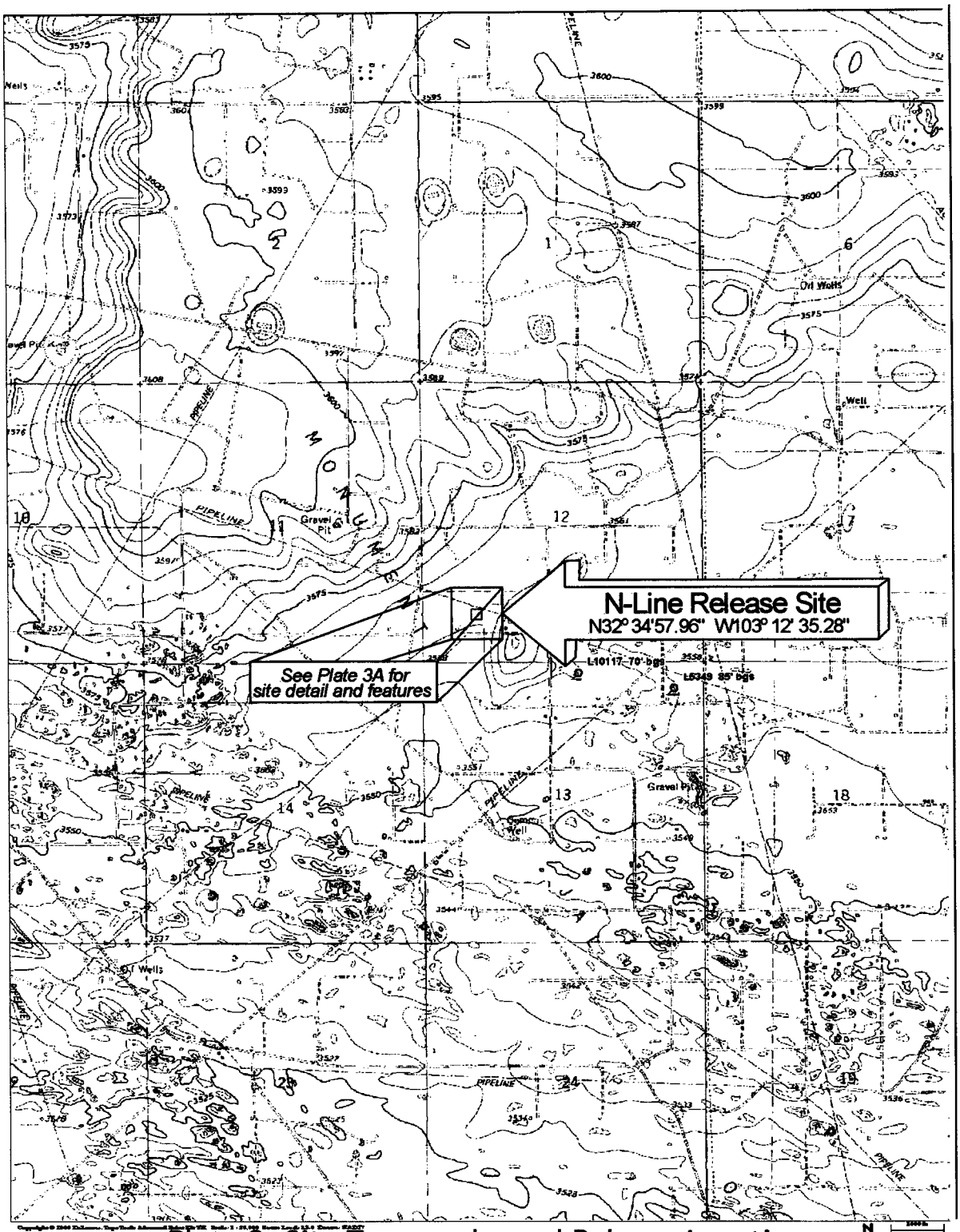
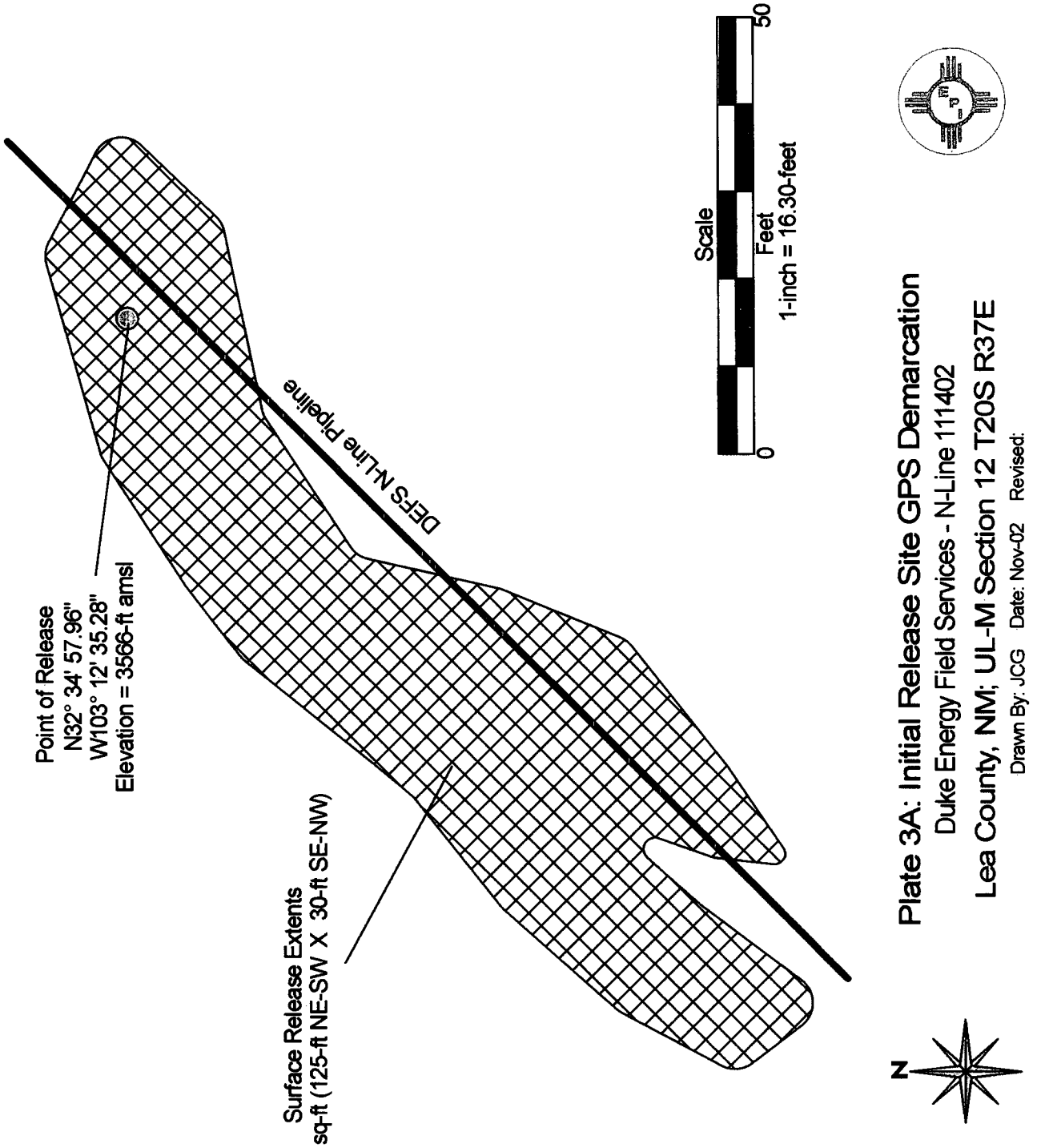


Plate 2: Site Topography and Release Location
Duke Energy Field Services - N-Line 111402
Lea County, NM; UL-M Section 12 T20S R37E

Plate 3A: Initial GPS Demarcation with Site Features



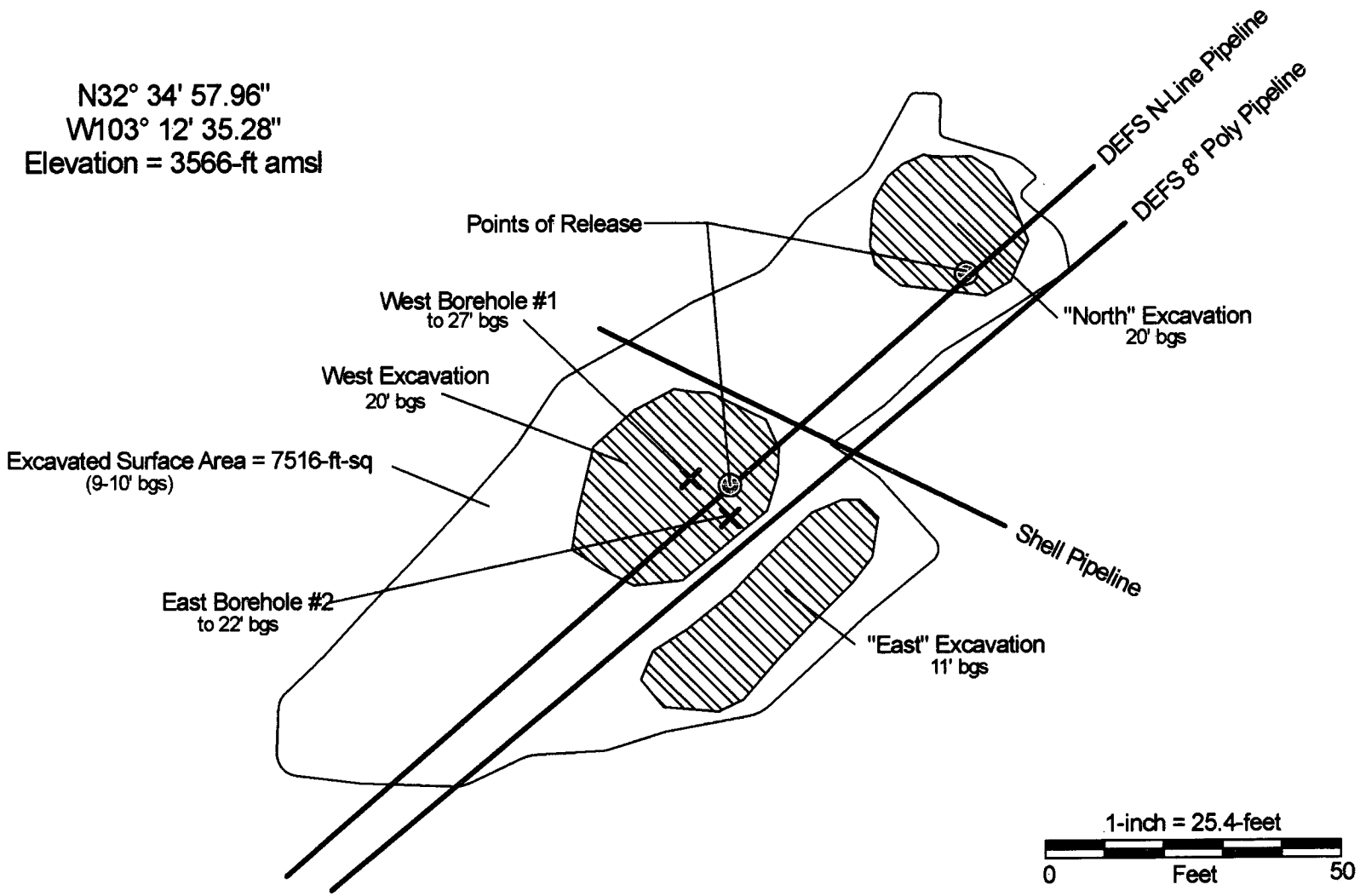


Plate 3B: 12/10/02 Excavation and Sampling GPS Demarcation

Duke Energy Field Services - N-Line 111402

Lea County, NM; UL-M Section 12 T20S R37E

Drawn By: JCG Date: Dec-02 Revised:

Plate 4 – Water Well Locations

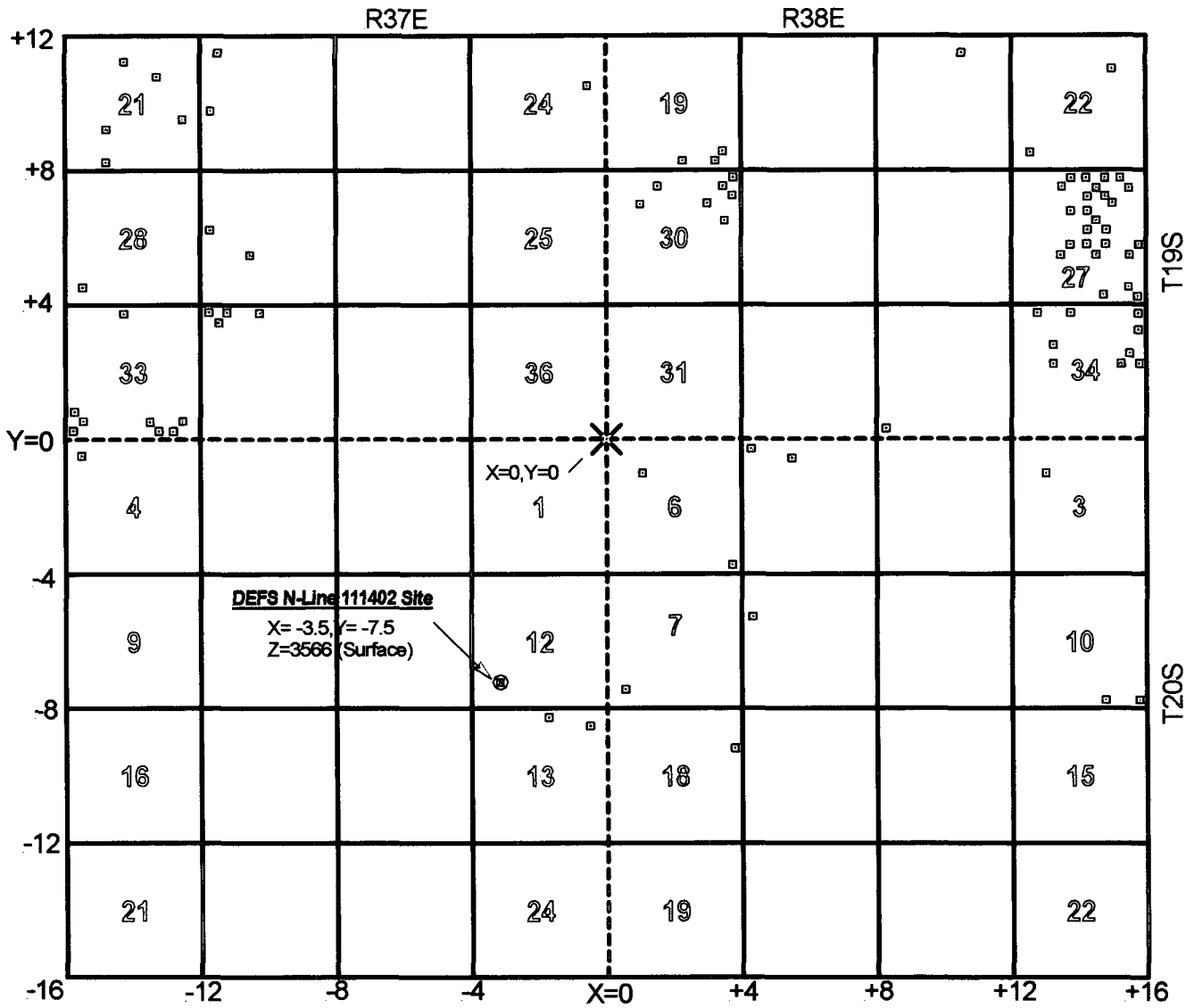


Plate 4 - Water Well Grid Locations (for Surfer 8.0 Plot of Water Table Elevations)
All Well Data is Contained in Table 1

Table 1: Water and Surface Elevation Data (with Surfer XY Coordinates)

NM State Engineer Water Column Report 11/13/02													
Well							Well	Water	Water	Surface	Water	Surfer Coordinates	
Number	Tws	Rng	Sec	Q	Q	Q	Depth	Depth	Column	Elevation	Elevation	X	Y
POR	20S	37E	12	2						3566		-1.00	-5.00
10117	20S	37E	13	2	1	1	130	70	60	3563	3493	-1.75	-8.25
5349	20S	37E	13	2	2		140	85	55	3560	3475	0.50	-8.50
10069	20S	37E	4	1	1		39	22	17	3565	3543	-15.50	-0.50
4501	20S	38E	3	1			62	45	17	3586	3541	13.00	-1.00
2495	20S	38E	5	1	1	1	104	24	80	3599	3575	4.25	-0.25
4769	20S	38E	5	1	2		104	54	50	3593	3539	5.00	-0.50
9771	20S	38E	6	1			65	53	12	3606	3553	1.00	-1.00
2498	20S	38E	6	4	4	4	88	67	21	3573	3506	3.75	-3.75
1675	20S	38E	7	3	3		130	80	50	3563	3483	0.50	-7.50
3281	20S	38E	8	1	3	1	127	60	67	3573	3513	4.25	-5.25
9503	20S	38E	10	4	3	4	100	47	53	3609	3562	14.75	-7.75
3125	20S	38E	10	4	4	4	52	52	0	3612	3560	15.75	-7.75
2109	20S	38E	18	2	4	2	124	50	74	3563	3513	3.75	-9.25
5336	19S	37E	21	1	2	4	71	30	41	3635	3605	-14.25	11.25
9163	19S	37E	21	2	3	2	60	47	13	3629	3582	-13.25	10.75
2621	19S	37E	21	3	2	3	83	40	43	3651	3611	-14.75	9.25
10238	19S	37E	21	3	4	3	60	30	30	3630	3600	-14.75	8.25
4108	19S	37E	21	4	2		70	22	48	3622	3600	-12.50	9.50
3313	19S	37E	22	1	1		90	40	50	3652	3612	-11.50	11.50
3387	19S	37E	22	3	1	1	95	35	60	3643	3608	-11.75	9.75
3474	19S	37E	24	2	4		83	48	35	3606	3558	-0.50	10.50
8217	19S	37E	27	1	3	3	50	18	32	3596	3578	-11.75	6.25
3515	19S	37E	27	3	2		57	35	22	3601	3566	-10.50	5.50
3982	19S	37E	28	3	3		43	31	12	3616	3585	-15.50	4.50
10397	19S	37E	33	1	2	2	34	13	21	3588	3575	-14.25	3.75
4842	19S	37E	33	3	3		60	35	25	3566	3531	-15.50	0.50
9128	19S	37E	33	3	3	1	30	26	4	3566	3540	-15.75	0.75
4448	19S	37E	33	3	3	3	46	36	10	3563	3527	-15.75	0.25
9129	19S	37E	33	4	3		52	43	9	3566	3523	-13.50	0.50
8501	19S	37E	33	4	3	4	43	29	14	3566	3537	-13.25	0.25
3738	19S	37E	33	4	4		72	31	41	3570	3539	-12.50	0.50
9127	19S	37E	33	4	4	3	52	40	12	3566	3526	-12.75	0.25
9768	19S	37E	34	1	1		39	24	15	3579	3555	-11.50	3.50
8803	19S	37E	34	1	1	1	41	25	16	3582	3557	-11.75	3.75
10403	19S	37E	34	1	1	2	41	20	21	3579	3559	-11.25	3.75
10386	19S	37E	34	1	2	2	34	21	13	3597	3576	-10.25	3.75
02389	19S	38E	19	4	3	3	92	30	62	3600	3570	2.25	8.25
07847	19S	38E	19	4	4		80	65	15	3593	3528	3.50	8.50
01559	19S	38E	19	4	4	3	82	82	0	3596	3514	3.25	8.25
03424	19S	38E	21	2	1		102	45	57	3602	3557	10.50	11.50
02746	19S	38E	22	2			110	60	50	3602	3542	15.00	11.00
04833	19S	38E	22	3	3		115	50	65	3596	3546	12.50	8.50
09868	19S	38E	27	1	2		103	52	51	3589	3537	13.50	7.50
09620	19S	38E	27	1	2	2	98	60	38	3593	3533	13.75	7.75
10130	19S	38E	27	1	4	2	96	40	56	3589	3549	13.75	6.75
08871	19S	38E	27	2			105	63	42	3596	3533	15.00	7.00
09703	19S	38E	27	2	1		104	65	39	3593	3528	14.50	7.50
09208	19S	38E	27	2	1	1	105	56	49	3593	3537	14.25	7.75

Table 1 (cont)

NM State Engineer Water Column Report 11/13/02													
Well Number	Tws	Rng	Sec	Q	Q	Q	Well Depth	Water Depth	Water Column	Surface Elevation	Water Elevation	Surfer Coordinates X	Surfer Coordinates Y
05789	19S	38E	27	2	1	2	87	50	37	3593	3543	14.75	7.75
09205	19S	38E	27	2	1	3	108	55	53	3593	3538	14.25	7.25
08992	19S	38E	27	2	1	4	100	54	46	3593	3539	14.75	7.25
09702	19S	38E	27	2	2		89	60	29	3595	3535	15.50	7.50
08855	19S	38E	27	2	2	1	105	55	50	3596	3541	15.25	7.75
09773	19S	38E	27	2	3		104	65	39	3589	3524	14.50	6.50
09074	19S	38E	27	2	3	1	100	55	45	3593	3538	14.25	6.75
09606	19S	38E	27	2	3	3	100	56	44	3589	3533	14.25	6.25
09501	19S	38E	27	2	3	4	92	40	52	3589	3549	14.75	6.25
09302	19S	38E	27	3	2		96	48	48	3589	3541	13.50	5.50
10417	19S	38E	27	3	2	2	94	30	64	3589	3559	13.75	5.75
09573	19S	38E	27	4	1		92	57	35	3586	3529	14.50	5.50
10812	19S	38E	27	4	1	1	100	44	56	3589	3545	14.25	5.75
09164	19S	38E	27	4	1	2	100	80	20	3589	3509	14.75	5.75
07968	19S	38E	27	4	2		130	65	65	3592	3527	15.50	5.50
04269	19S	38E	27	4	2	2	80	49	31	3598	3549	15.75	5.75
09836	19S	38E	27	4	3	4	98	57	41	3583	3526	14.75	4.25
03433	19S	38E	27	4	4		100	55	45	3590	3535	15.50	4.50
01464	19S	38E	27	4	4	4	85	58	27	3596	3538	15.75	4.25
02829	19S	38E	34	1	1	2	68	35	33	3583	3548	12.75	3.75
01687	19S	38E	34	1	2	2	50	40	10	3583	3543	13.75	3.75
02978	19S	38E	34	1	4	1	54	35	19	3583	3548	13.25	2.75
10425	19S	38E	34	1	4	3	60	35	25	3583	3548	13.25	2.25
03955	19S	38E	34	2	2	2	100	58	42	3602	3544	15.75	3.75
11014	19S	38E	34	2	2	4	128	67	61	3600	3533	15.75	3.25
08612	19S	38E	34	2	4		105	65	40	3593	3528	15.50	2.50
07327	19S	38E	34	2	4	3	75	45	30	3586	3541	15.25	2.25
02582	19S	38E	34	2	4	4	80	57	23	3593	3536	15.75	2.25
10611	19S	38E	30	1			97	50	47	3609	3559	1.00	7.00
7573	19S	38E	30	1	2		120	50	70	3609	3559	1.50	7.50
9758	19S	38E	30	2			130	80	50	3602	3522	3.00	7.00
8940	19S	38E	30	2	2		90	70	20	3597	3527	3.50	7.50
9182	19S	38E	30	2	2	2	100	48	52	3596	3548	3.75	7.75
10821	19S	38E	30	2	2	4	61	37	24	3599	3562	3.75	7.25
7976	19S	38E	30	2	4		81	48	33	3609	3561	3.50	6.50
1312	19S	38E	33	3	3	3	67	40	27	3599	3559	8.25	0.25

Plate 5: Surfer 8.0 Water Table Elevation Plot

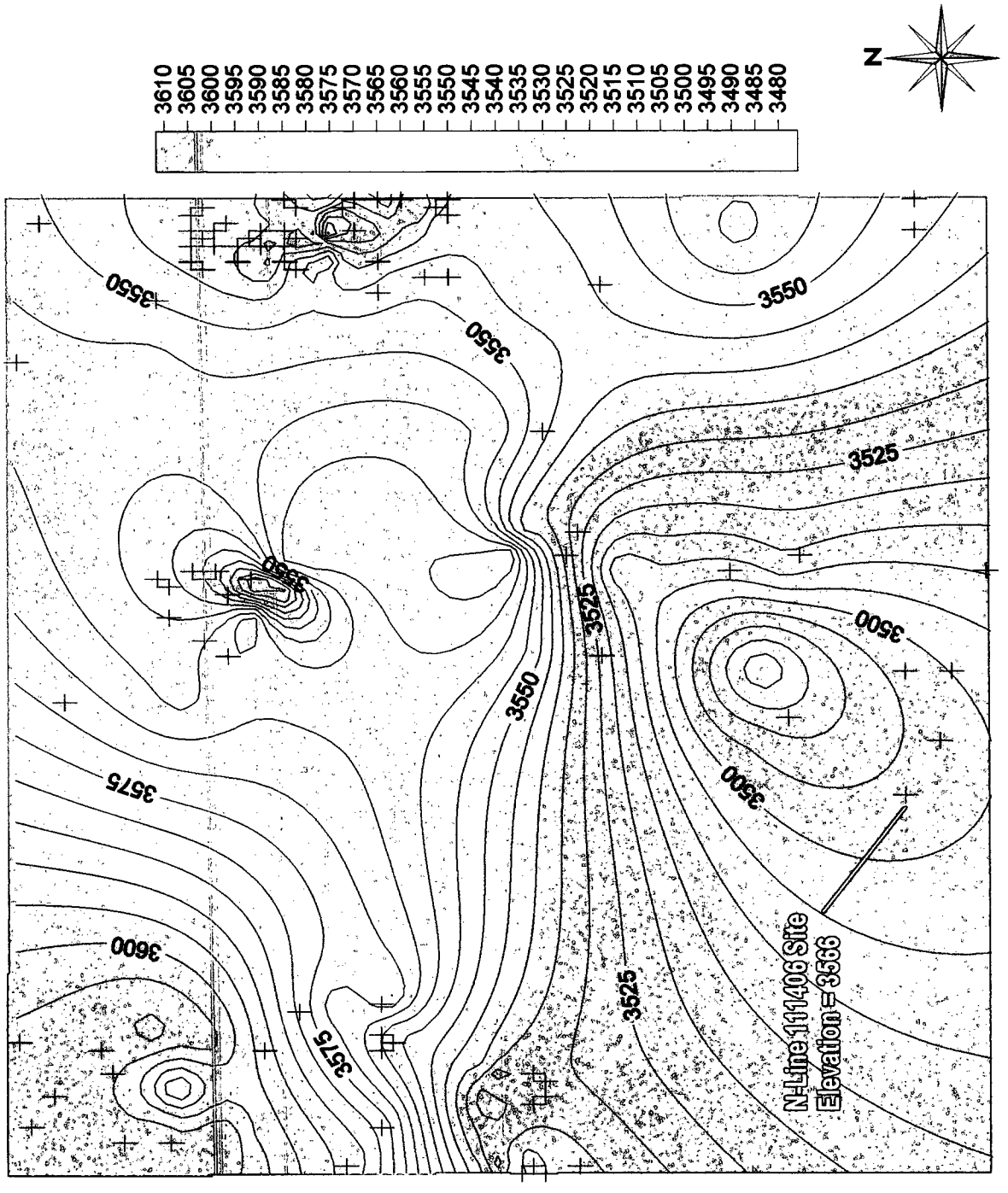


Plate 5: Water Table Elevation Plot (Surfer 8.0)
Duke Energy Field Services - N-Line 111402
Lea County, NM; UL-M Section 12 T20S R37E
Drawn By: JCG Date: Feb-03 Revised:

Plate 6: Soil Analytical Data and Associated Bar Charts

Duke Energy Field Services - N-Line 111402 - Excavation Sampling Results

Bold highlighted cells indicate values in excess of the NMOCD remedial action guideline thresholds: TPH = 5000 mg/Kg; Benzene = 10 mg/Kg; BTEX = 50 mg/Kg; Cl = 250 mg/Kg; SO4 = 600 mg/Kg

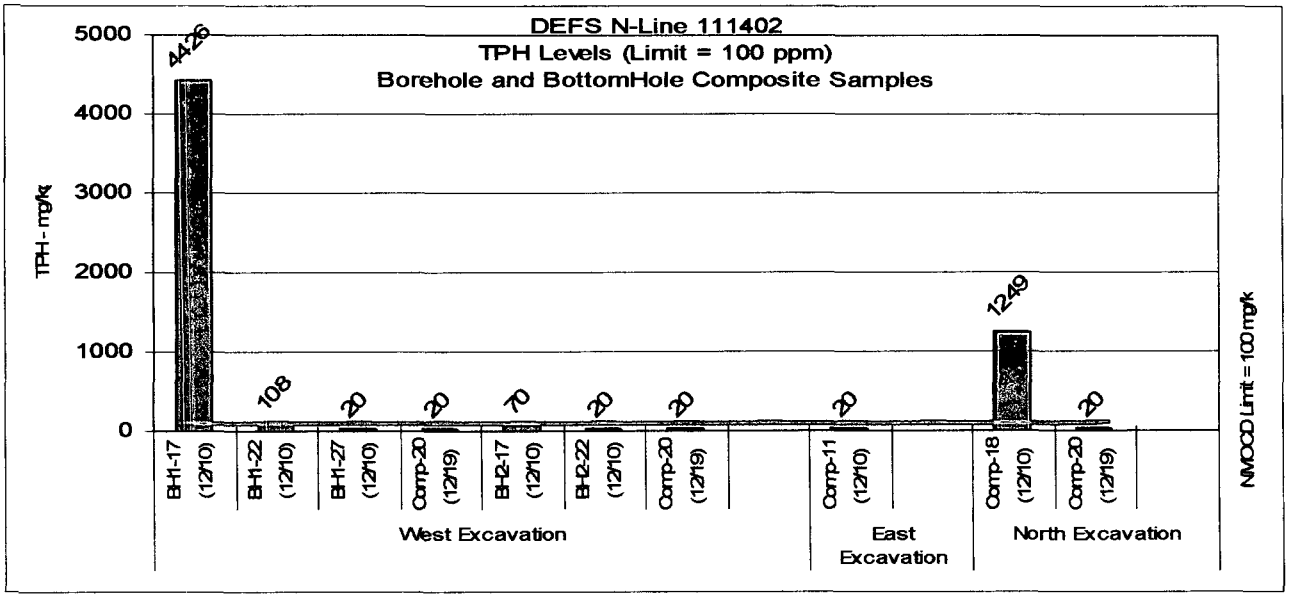
Sample Date	Excavation Sampling Area	Depth (ft - bgs[1])	SAMPLE ID#	VOC[2] ppm	GRO[3] mg/Kg	DRO[4] mg/Kg	TPH[5] mg/Kg	BTEX[6] mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ethyl Benzene mg/Kg	Total Xylenes mg/Kg	Cl^- mg/Kg	$SO_4^=$ mg/Kg
10-Dec	West Borehole #1	17-ft	SDNL121002WBH-17		486	3940	**4426**	16.946	0.006	2.420	4.420	10.100	48.0	172.0
10-Dec	West Borehole #1	22-ft	SDNL121002WBH-22		10	98	108	0.035	0.005	0.005	0.007	0.018		
10-Dec	West Borehole #1	27-ft	SDNL121002WBH-27		10	10	20	0.030	0.005	0.005	0.005	0.015		
19-Dec	BottomHole - West #1	20-ft	SDNL11141219WBHC-20		10	10	20	0.030	0.005	0.005	0.005	0.015		
10-Dec	East Borehole #2	17-ft	SDNL121002EBH-17		10	60	70	0.030	0.005	0.005	0.005	0.015	64.0	116.0
10-Dec	East Borehole #2	22-ft	SDNL121002EBH-22		10	10	20	0.035	0.005	0.005	0.006	0.019		
19-Dec	BottomHole - West #2	20-ft	SDNL11141219EBHC-20		10	10	20		0.005	0.005	0.005	0.015		
10-Dec	BottomHole - East	11-ft	SDNL121002EBHC-11		10	10	20	0.030	0.005	0.005	0.005	0.015	64.0	396.0
10-Dec	BottomHole - North	18-ft	SDNL121002NBHC-18		99	1150	**1249**	2.374	0.006	0.176	0.513	1.680	176.0	176.0
19-Dec	BottomHole - North	20-ft	SDNL11141219NBHC-20		10	10	20	0.030	0.005	0.005	0.005	0.015		

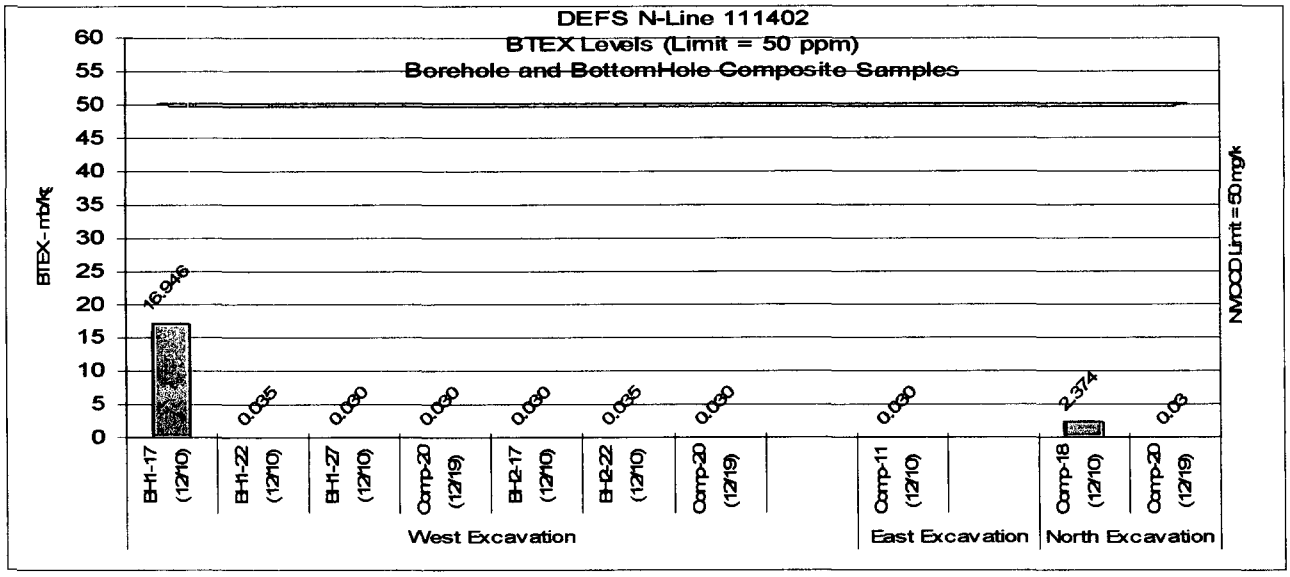
[1] bgs = below ground surface [2] VOC = Volatile Organic Constituents; (note: 100 ppm Isobutylene calibration gas = 101 ppm)

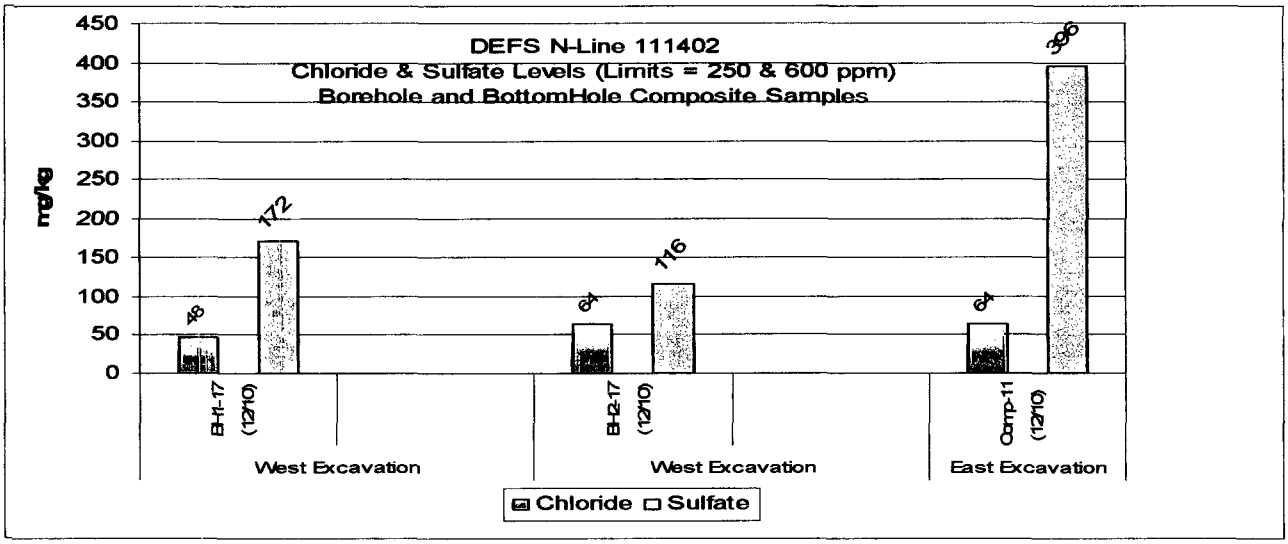
[3] GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) [4] DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg) [5] TPH - Total Petroleum Hydrocarbon (GRO+DRO)

[6] BTEX = Sum of CoC's (Detection Limits = 0.005 mg/Kg; 0.015 mg/Kg) Note: Reported detection limits are considered "de minimus" values and are included in the TPH and BTEX summations.

Plate 7 – Lab Analysis Charts







Lab Analyses Reports and Chain-of-Custody Forms

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

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

Receiving Date: 12/10/02
Reporting Date: 12/13/02
Project Owner: DUKE ENERGY
Project Name: N-LINE
Project Location: NOT GIVEN

Sampling Date: 12/10/02
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:		12/11/02	12/11/02	12/11/02	12/11/02	12/11/02	12/11/02
H7301-1	SDNL121002WBH-17'	486	3940	0.006	2.42	4.42	10.1
H7301-2	SDNL121002WBH-227'	<10.0	97.5	<0.005	<0.005	0.007	0.018
H7301-3	SDNL121002WBH-27'	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7301-4	SDNL121002EBH-17'	<10.0	59.5	<0.005	<0.005	<0.005	<0.015
H7301-5	SDNL121002EBH-22'	<10.0	<10.0	<0.005	<0.005	0.006	0.019
H7301-6	SDNL121002EBHC-11'	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7301-7	SDNL121002NBHC-18'	99.9	1150	<0.005	0.176	0.513	1.68
Quality Control		784	743	0.097	0.095	0.090	0.269
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		98.0	92.9	96.7	95.4	90.4	89.6
Relative Percent Difference		2.0	3.1	3.3	4.6	7.9	5.2

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

Burgess J. A. Cooke, Ph. D.

12/13/02
Date

H7301A.XLS

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

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

Receiving Date: 12/10/02
Reporting Date: 12/16/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: N-LINE
Project Location: NOT GIVEN

Sampling Date: 12/10/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)	SO_4 (mg/Kg)	pH (s.u.)
ANALYSIS DATE		12/13/02	12/13/02	12/13/02
H7301-1	SDNL121002WBH1-17'	48	172	6.95
H7301-4	SDNL121002EBH2-17'	64	116	7.36
H7301-6	SDNL121002EBHC-11'	64	396	7.39
Quality Control		970	50.20	6.75
True Value QC		1000	50.00	7.00
% Recovery		97.0	100	96.4
Relative Percent Difference		1.0	0.7	0.1
METHODS: 600/4-79-020		4500-Cl^-B*	375.4	150.1

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

Amy Hill
Chemist

12-16-02
Date

H7301

2111 Be... Wood, Abilene, TX 79603   101 East Marland, Hobbs, NM 8824...

[redacted] (915) 67[redacted]7001 Fax (91[redacted]3-70[redacted] (50[redacted]3-23[redacted]ax (50[redacted]93-24[redacted] [redacted] [redacted] [redacted] [redacted] [redacted] [redacted]ge [redacted] of [redacted] [redacted] [redacted]

Company Name:	Environmental Plus	**BILL TO**	
Project Manager:	John Good	P.O. #:	
Address:	2100 Ave O	Company:	
City: Eunice	State: N.M. Zip: 88231	Attn:	
Phone #: 505-394-3481	Fax #: 505-394-2601	Address:	
Project #:	Project Owner: Duke Energy	City:	
Project Name:	N-Line	State:	Zip:
Project Location:		Phone #:	
Sampler Name:	Bradley Blevins	Fax #:	

ANALYSIS REQUEST

Lab I.D. (Lab use only)	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	PRESERV: ACID/BASE:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	TPH 8015M	BTEX 8021B	Cl	SO4	pH								
7301-1	SDNL121002WBH1-17'	G	1			X					X		12-10	8:40	X	X	X	X	X								
-2	SDNL121002WBH1-22'	G	1			X					X		12-10	9:15	X	X											
-3	SDNL121002WBH1-27'	G	1			X					X		12-10	9:40	X	X											
-4	SDNL121002EBH2-17'	G	1			X					X		12-10	10:30	X	X	X	X	X								
-5	SDNL121002EBH2-22'	G	1			X					X		12-10	11:00	X	X											
-6	SDNL121002EBHC-11'	C	1			X					X		12-10	2:00	X	X	X	X	X								
-7	SDNL121002NBHC-18'	C	1			X					X		12-10	2:10	X	X											

NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: Bradley Blevins	Date: 12-10-02 Time: 4:00	Received By: John Good	Phone Result: ☐ Yes ☐ No Add'l Phone #: Fax Result: ☐ Yes ☐ No Add'l Fax #: REMARKS:
Relinquished By: John Good	Date: 12-10-02 Time: 4:40	Received By: (Lab Staff) Burgess J. A. Cooke	
Delivered By: (Circle One) Sampler - UPS - Bus - Other:		Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No CHECKED BY: (Initials)	

† Cardinal cannot accept verbal changes. Please fax written changes to 505-393-2476

CARDINAL LABORATORIES

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603
PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS. NM 88240

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

Receiving Date: 12/19/02
Reporting Date: 12/20/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: N LINE 111402
Project Location: UL-M SECTION 12 T20S R37E

Sampling Date: 12 /19/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
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:		12/19/02	12/19/02	12/19/02	12/19/02	12/19/02	12/19/02
H7338-1	SDNL11141219NBHC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7338-2	SDNL11141219EBHC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7338-3	SDNL11141219WBHC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
Quality Control		831	806	0.102	0.098	0.099	0.288
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		104	101	102	97.7	98.5	96.1
Relative Percent Difference		1.6	2.2	3.3	1.7	2.9	2.8

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

Burgess J. A. Cooke, PH. D.

12/20/02
Date

H7338.XLS

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.
Project Manager	John Good
Address	P.O. BOX 1558
City, State, Zip	Eunice New Mexico 88231
Phone#/Fax#	505-394-3481 / 505-394-2601
Project #/Owner	Duke Energy Field Services
Project Name	N Line 111402
Project Location	UL-M Section 12 T20S R37E
Sampler Name	John Good

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^{2-})	pH
H7338-1	1	SDNL11141219NBHC	C	1			X					X		19-Dec	8:30	X	X			
-2	2	SDNL11141219EBHC	C	1			X					X		19-Dec	8:35	X	X			
-3	3	SDNL11141219WBHC	C	1			X					X		19-Dec	8:40	X	X			
	4																			
	5																			
	6																			
	7																			
	8																			
	9																			
	10																			
	11																			
	12																			
	13																			
	14																			

Sampler Relinquished: [signature] Date 12/19 Time 2:30

Received By: [signature]

Relinquished by: [signature] Date 12/19 Time

Received By: (lab staff) [signature]

Delivered by:

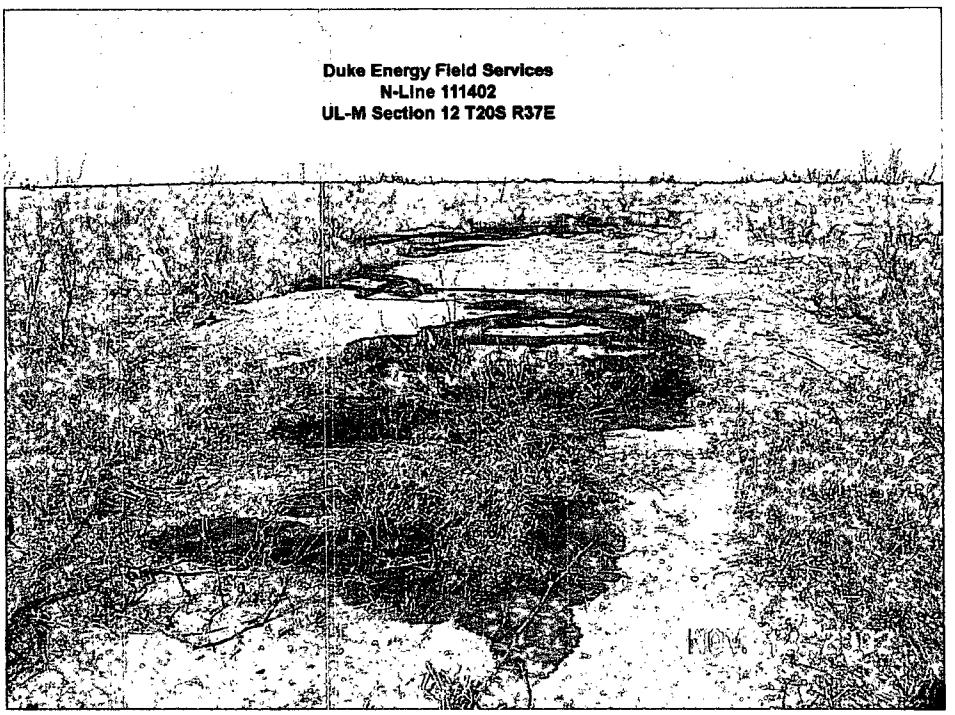
Sample Cool & Intact Yes No

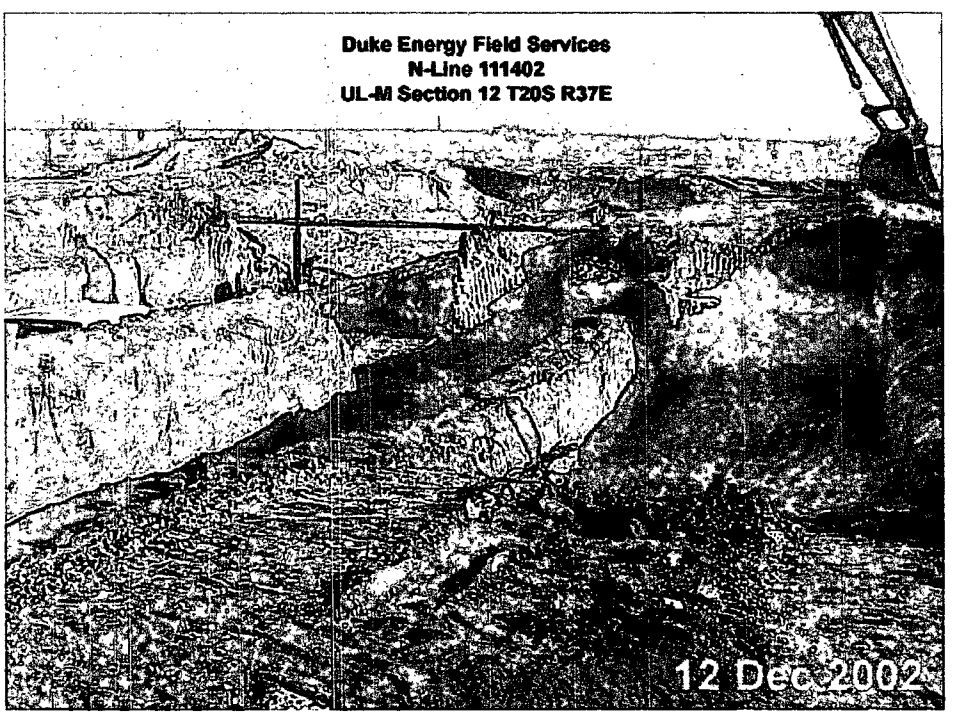
Checked By:

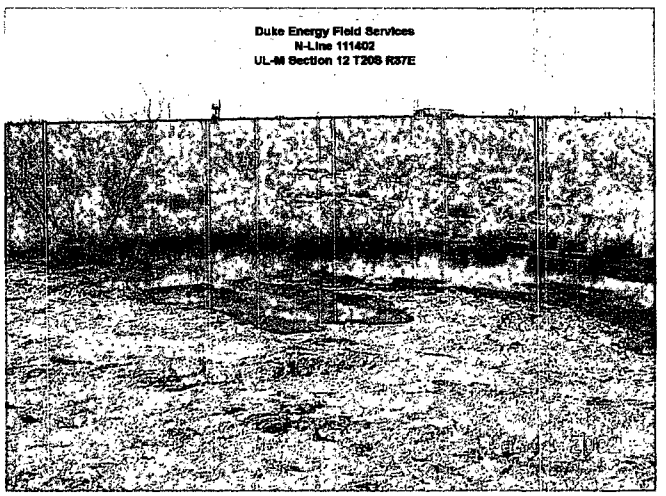
Fax Results To John Good 505-394-2601

REMARKS:

Site Photographs



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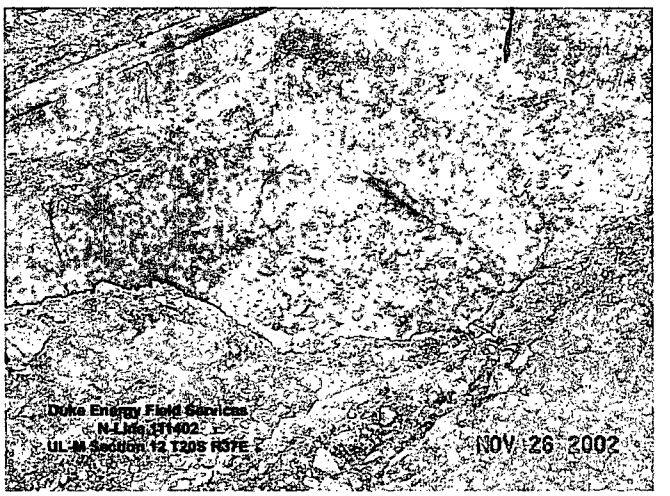
N-Line 111402
UL-M Section 12 T20S R37E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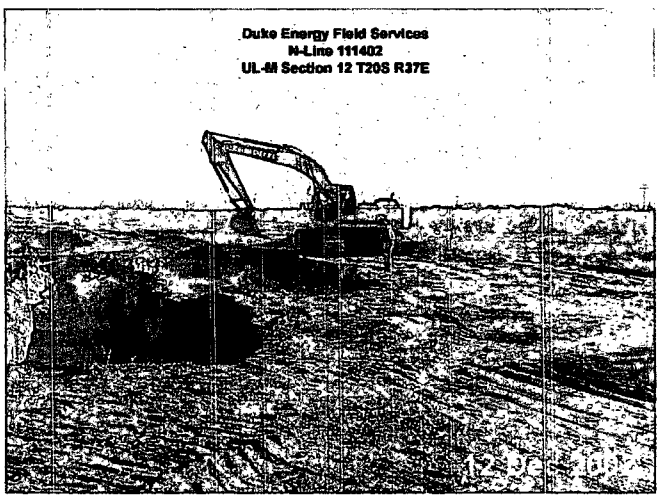
N-Line 111402
UL-M Section 12 T20S R37E
NOV 26 2002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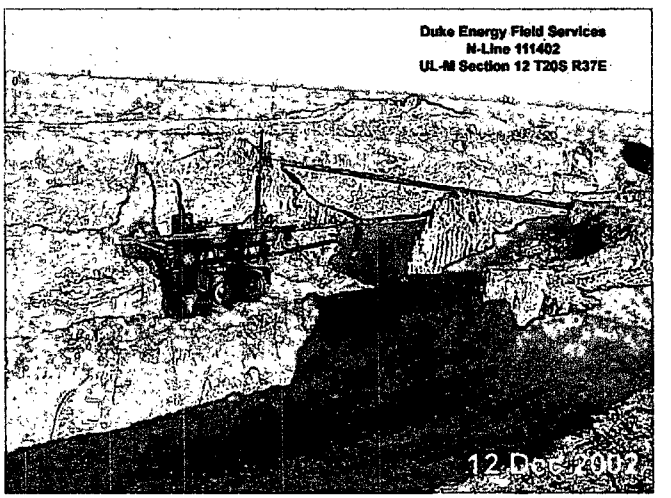
N-Line 111402
UL-M Section 12 T20S R37E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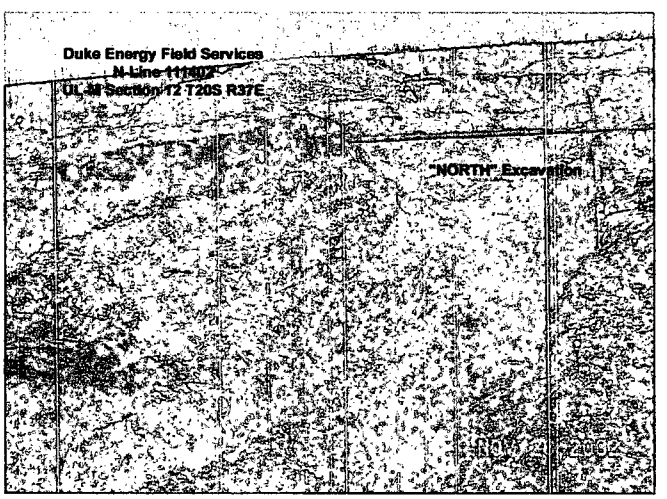
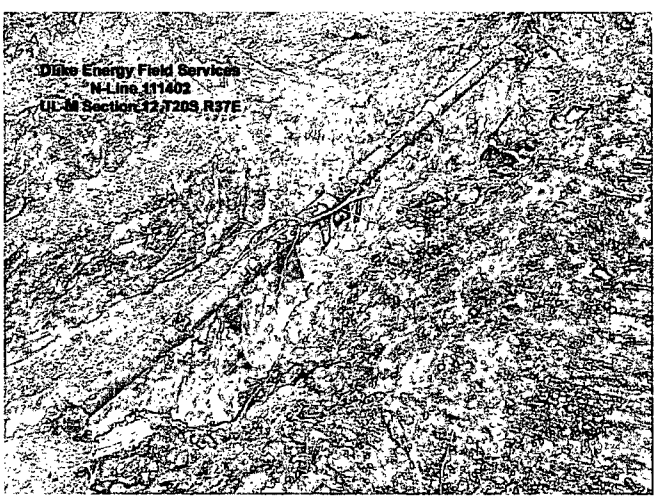
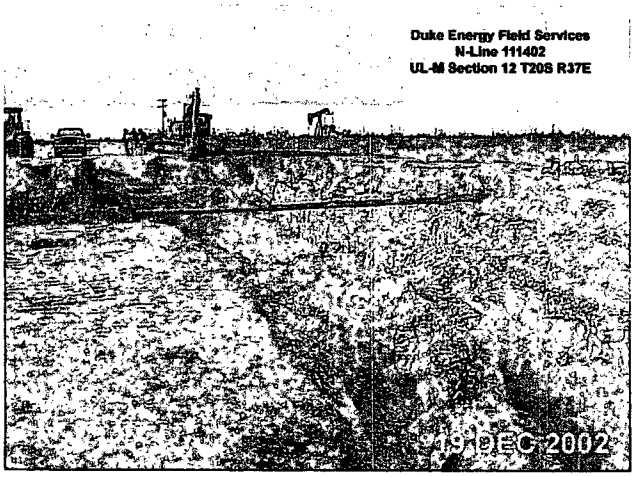
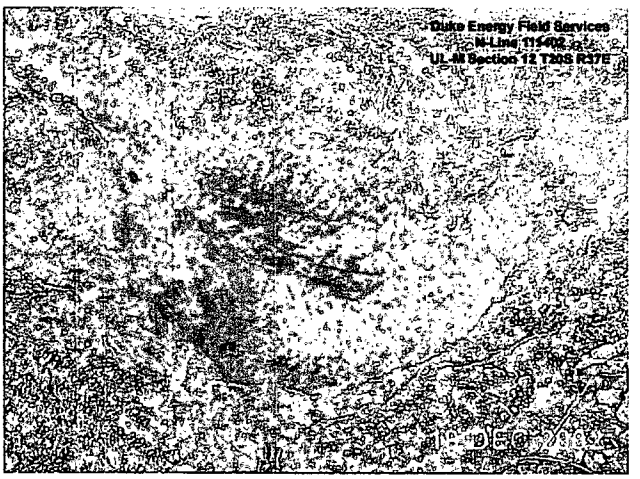
N-Line 111402
UL-M Section 12 T20S R37E
12 Dec 2002


Duke Energy Field Services
N-Line 111402
UL-M Section 12 T20S R37E
"NORTH" Excavation


Duke Energy Field Services
N-Line 111402
UL-M Section 12 T20S R37E


Duke Energy Field Services
N-Line 111402
UL-M Section 12 T20S R37E
19 DEC 2002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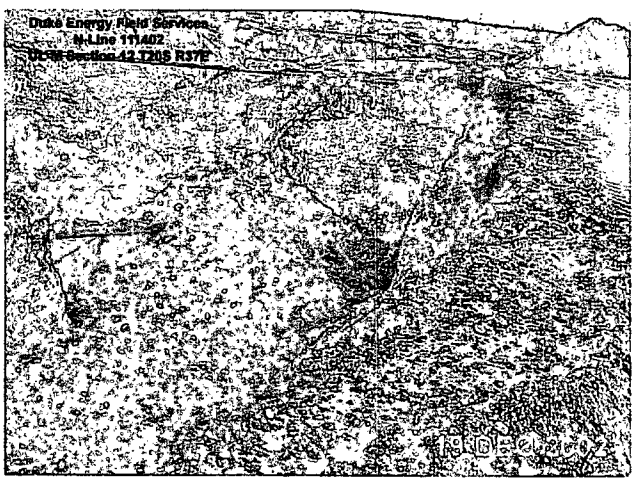
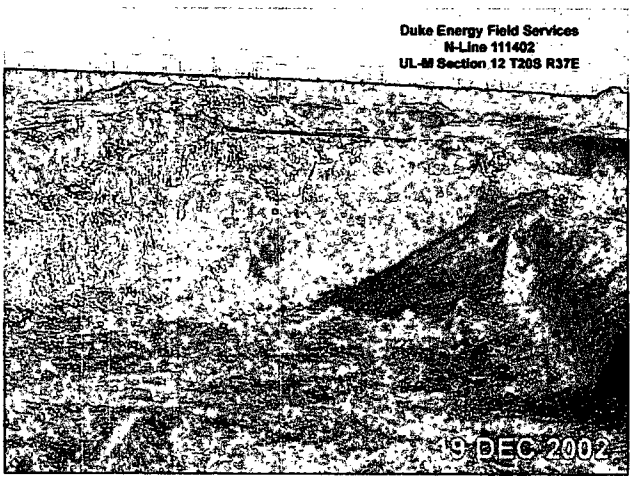
N-Line 111402
UL-M Section 12 T20S R37E


Duke Energy Field Services
N-Line 111402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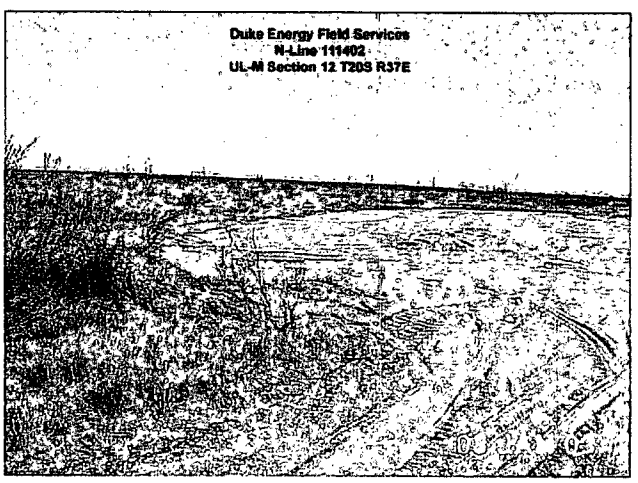
N-Line 111402
UL-M Section 12 T20S R37E
19 DEC 2002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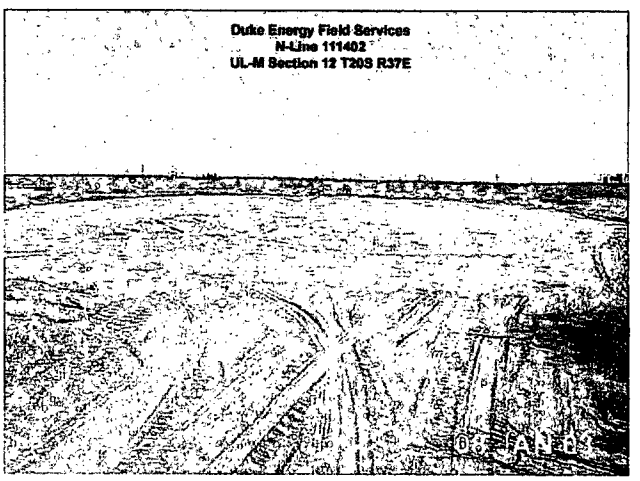
N-Line 111402
UL-M Section 12 T20S R37E


Duke Energy Field Services
N-Line 111402
UL-M Section 12 T20S R37E

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

State of New Mexico
Energy Minerals and Natural Resources

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

Form C-141
Revised March 17, 1999

Submit 2 Copies to appropriate District Office in accordance with Rule 116 on back side of form

Release Notification and Corrective Action

OPERATOR

☐ Initial Report ☑ Final Report

Name of Company	Contact
Duke Energy Field Services	**Paul Mulkey**
Address	Telephone No.
11525 West Carlsbad Hwy, Hobbs, NM 88240	**505-397-5716**
Facility Name	Facility Type
N-Lne	**Natural Gas Pipeline**

Surface Owner	Mineral Owner	Lease No.
SW Cattle Co.	**NA**	**NA**

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from South Line	Feet from West Line	Longitude	Latitude	County:
M	**12**	**20S**	**37E**	**907**	**1030**	**W103:12:35.28**	**N32:34:57.96**	**Lea**

NATURE OF RELEASE

Type of Release	Volume of Release	Volume Recovered
Natural Gas and associated liquid components	**Unknown bbl**	**10 bbl**
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Steel Natural Gas Pipeline	**11/14/02- AM**	**11/14/02-2:00 PM**
Was Immediate Notice Given? ☑ Yes ☐ No ☐ Not Required	If YES, To Whom? **NMOCD - Larry Johnson**	
By Whom? **Stan Shaver**	Date and Hour **11/14/02-3:00 PM**	
Was a Watercourse Reached? ☐ Yes ☑ No	If YES, Volume Impacting the Watercourse. **NA**	

If a Watercourse was Impacted, Describe Fully.*
NA

Describe Cause of Problem and Remedial Action Taken.*
Corroded pipeline, temporary repair with clamp; ultimately replaced.

Describe Area Affected and Cleanup Action Taken.*
~2676-ft^2 surface area affected. Historical contamination encountered during excavation. All contaminated RCRA Exempt Non-hazardous soil was excavated and disposed of at J&L Land Farm. The excavation was backfilled with clean material purchased from the land owner.

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: Paul Mulkey	**OIL CONSERVATION DIVISION**	
Printed Name: **Paul Mulkey**	Approved by District Supervisor:	
Title: **Construction and Maintenance Supt. Duke Energy Field Services**	Approval Date:	Expiration Date:
Date: **2/24/03** Phone: **505-397-5716**	Conditions of Approval:	☐ Attached

Attach Additional Sheets If Necessary

Duke Energy Field Services	Incident Date and NMOCD Notified? 11/14/02-2:00 PM 11/14/02-3:00 PM	
SITE: N-Lne		Assigned Site Reference #: N-Line 111402
Company:	Duke Energy Field Services	
Street Address:	11525 West Carlsbad Hwy, Hobbs, NM 88240	
Mailing Address:	11525 West Carlsbad Hwy, Hobbs, NM 88240	
City, State, Zip:		
Representative:	Paul Mulkey	
Representative Telephone:	505-397-5716	
Telephone:		
Fluid volume released (bbls):	Unknown	Recovered (bbls): 10
>25 bbls: Notify NMOCD verbally within 24 hrs and submit form C-141 within 15 days.		
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:	N-Line 111402	
Source of contamination:	Steel Natural Gas Pipeline	
Land Owner, i.e., BLM, ST, Fee, Other:	SW Cattle Co. P.O. Box 1800, Hobbs, NM 88240	
LSP Dimensions:	see Plate 3 attached	
LSP Area:	2676 -ft^2	
Location of Reference Point (RP):		
Location distance and direction from RP:		
Latitude:	N32:34:57.96	
Longitude:	W103:12:35.28	
Elevation above mean sea level:	3566 -ft amsl	
Feet from South Section Line:	907	
Feet from West Section Line:	1030	
Location - Unit or 1/4 1/4:	UL- M SW 1/4 of SW 1/4	
Location - Section:	12	
Location - Township:	20S	
Location - Range:	37E	
Surface water body within 1000' radius of Site:	0	
Surface water body within 1000' radius of Site:	0	
Domestic water wells within 1000' radius of Site:	0	
Domestic water wells within 1000' radius of Site:	0	
Agricultural water wells within 1000' radius of Site:	0	
Agricultural water wells within 1000' radius of Site:	0	
Public water supply wells within 1000' radius of Site:	0	
Public water supply wells within 1000' radius of Site:	0	
Depth (ft) from land surface to ground water (DG):	60	
Depth (ft) of contamination (DC):	20	
Depth (ft) to ground water (DG - DC = DtGW):	40	

1. Ground Water	2. Wellhead Protection Area	3. Distance to Surface Water Body
If Depth to GW <50 feet: *20 points*	If <1000' 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 >1000' from water source, or, >200' from private domestic water source: *0 points*	>1000 horizontal feet: 0 points
Ground water Score: 20	*Wellhead Protection Area Score: 0*	*Surface Water Score: 0*
Site Rank (1+2+3) = 20		

Total Site Ranking Score and Acceptable 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**	1000 ppm	5000 ppm

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