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# SITE INVESTIGATION, REMEDiation AND FINAL C-141 CLOSURE DOCUMENTATION

O-LINE RELEASE SITE  
DEFS REF: 130003

UL-J (NW¼ OF THE SE¼) OF SECTION 19 T17S R32E

~3.5 MILES SOUTHWEST OF MALJAMAR

LEA COUNTY, NEW MEXICO

LATITUDE: N 32° 49' 3.673"

LONGITUDE: W 103° 48' 8.156"

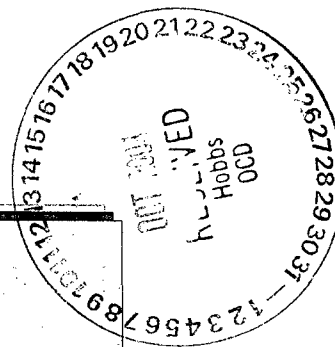
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OCTOBER 12, 2004

817061

PREPARED BY:



**Environmental Plus, Inc.**

2100 Avenue O

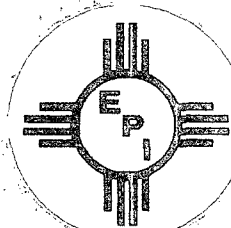
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## Project Summary

### ***Site Specific:***

- ◆ **Company Name:** Duke Energy Field Services
- ◆ **Facility Name:** O-Line Natural Gas Gathering Pipeline
- ◆ **Project Reference** 130003
- ◆ **Company Contacts:** Paul Mulkey
- ◆ **Site Location:** WGS84 N32° 49' 3.673"; W103° 48' 8.156"
- ◆ **Legal Description:** Unit Letter J, (NW¼ of the SE¼), Section 19, T17S, R32E
- ◆ **General Description:** approximately 3.5-miles southwest of Maljamar, New Mexico
- ◆ **Elevation:** 3,935-ft amsl    **Depth to Ground Water:** >100-ft
- ◆ **Land Ownership:** BLM (leased by Norman Caswell)
- ◆ **EPI Personnel:**      Project Consultant – Iain Olness  
   Site Foreman – Eddie Joe Harper

### ***Release Specific:***

- ◆ **Product Released:** Natural Gas & NGL
- ◆ **Volume Released:** ≈20-bbl reported    **Volume Recovered:** ≈15-bbl
- ◆ **Time of Occurrence:** 20-May-04    **Time of Discovery:** 20-May-04
- ◆ **Release Source:** 8" steel NG pipeline; integrity lost due to internal corrosion; repaired by clamping with ultimate replacement of section.
- ◆ **Initial Surface Area Affected:** 1,075-ft<sup>2</sup>

### ***Remediation Specific:***

- ◆ **Final Vertical extent of contamination:** 16-ft bgs; Remaining depth to ground water: >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) Excavation of contaminated soil above NMOCD remedial goals; b) laboratory analyses to confirm removal of soil impacted of NMOCD remedial thresholds; c) blend excavated soil with surrounding clean soil and backfill the excavation.
- ◆ **Disposal Facility:** Not Applicable                      **Volume disposed of:** 0-yd<sup>3</sup>
- ◆ **Project Completion Date:** 16 June 2004
- ◆ **Additional Commentary:** None

## **1.0 Introduction & Background**

This report addresses the site investigation and remediation of the Duke Energy Field Services (DEFS) "O-Line" 8-inch natural gas gathering line remediation site. On May 20, 2004, Environmental Plus, Inc. (EPI) was notified by DEFS regarding a recently discovered natural gas and associated natural gas liquid (NGL) release along the O-Line. This site is located approximately 3.5 miles southwest of Maljamar, Lea County, New Mexico (*reference Figure 1*). The initial C-141 Form submitted to the New Mexico Oil Conservation Division (NMOCD) on June 1, 2004, reports the release volume as approximately 20-barrels with 15-barrels recovered. EPI performed GPS surveying, photography and characterization of the site on June 1, 2004. The initial site consisted of an approximate 1,075 square feet (ft<sup>2</sup>) visibly affected surface area (*reference Figure 3*).

Initial activities at the site consisted of delineating the extent of contamination via test trenches. One trench was excavated in the north/south direction and one in the east/west direction. Samples were collected from the trenches and analyzed in the field for the presence of organic vapors utilizing an UltraRae photoionization detector (PID) equipped with a 10.6 electron-volt (eV) lamp. In addition, the samples were submitted for laboratory confirmation to ensure the extents of contamination had been delineated.

Once the extents of contamination had been delineated, remediation activities commenced. Remediation of this site consisted of excavation and blending of approximately 1,500 cubic yards (yds<sup>3</sup>) of contaminated soil from what was ultimately a 2,675-ft<sup>2</sup> excavation extending to 15-feet below ground surface (bgs). The contaminated soil was blended on site with clean soil obtained from the right-of-way. The excavation bottom(s) and sidewalls were sampled on June 9, 2004 and analyzed in the field for the presence of organic vapors utilizing an UltraRae photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp and submitted for laboratory quantification. Analytical results indicated benzene, toluene, ethylbenzene and total xylene (BTEX) concentrations above the NMOCD remedial threshold of 50 parts per million (ppm) remained in the bottom of the excavation. Excavation activities resumed and another sample was collected from approximately two feet below the impacted sample. Analytical results for this sample indicated all contaminant concentrations were less than the NMOCD remedial thresholds. The construction phase of the site remediation commenced on June 3, 2004 and was completed with backfilling and contouring on June 16, 2004.

This release site is located in Unit Letter J, (NW¼ of the SE¼), Section 19, T217, R32E, N32° 49' 3.673" and W103° 48' 8.156". The site is approximately 3.5-miles southwest of Maljamar, New Mexico. The property is owned by the Bureau of Land Management (BLM) and leased by Norman Caswell (*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 (*Quercus 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 >220-ft bgs based on limited water depth data obtained from the New Mexico State Engineers Office data base and information provided by the landowner. 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.

## **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)**

Acceptable thresholds for contaminants/constituents of concern (CoC), i.e., TPH<sup>8015m</sup>, 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			
Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	20 or >	10	0
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX <sup>1</sup>	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm

<sup>1</sup> 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 with test excavations of the release area associated with the point of release (POR) to depths of 8-ft bgs on June 3, 2004. The lateral extent of contamination was determined with measurements of organic vapor concentrations as the excavation progressed outwardly from the POR. Organic vapor concentrations were measured in the field utilizing an UltraRae PID equipped with a 10.6 eV lamp.

Upon delineating the extents of impacted soil, composite soil samples were collected from the base and sidewalls of the excavation and analyzed in the field to verify remedial limits had been achieved. Organic vapor concentrations ranged from 6.2 to 394 ppm with an average concentration of 112 ppm (*reference Table 1*). In addition, samples were collected and submitted to an independent laboratory for quantification of GRO, DRO, BTEX, chlorides and sulfates. Analytical results indicated concentrations for all analytes were below the NMOCD remedial thresholds for all samples, with the exception chloride in the sample obtained from the "south" trench. Chloride concentrations for this sample were reported at 2,000 mg/Kg (*reference Table 1*).

## 5.0 Ground Water Investigation

The projected depth to ground water at this site is >220-ft bgs. Excavation of the site was to a maximum depth of sixteen feet. Final field analyses for soil samples collected from the base of the excavation indicated organic vapor concentrations of <300 ppm (*reference Table 1*). In addition, analytical results for samples collected from the sidewalls and base of the excavation indicated concentrations below NMOCD remedial thresholds, with the exception of chloride in the sample

collected from the south sidewall of the excavation. Chloride concentrations for this sample were reported at 2,239 mg/Kg (*reference Table 1*).

The excavation was backfilled with the excavated material after it had been blended to below NMOCD remedial thresholds with clean soil obtained from the right-of-way. Based on the treatment of impacted soil to below remedial goal concentrations and adequate depth to ground water, there is no need for further groundwater investigation at this site.

## **6.0 Remediation Process**

Remediation of the site commenced on June 4, 2004 and continued through June 16, 2004. Remedial activities at the site consisted of excavation and blending of 1,500 yd<sup>3</sup> of NGL contaminated soil from the site. The contaminated soil was blended with clean soil to below NMOCD remedial thresholds obtained from the right-of-way and verified via laboratory analyses of samples SDEOL61004BC 0-50 and SDEOL61004 50-100 (*reference Table 1 and Appendix 1*). After field analyses of soil samples collected from the sidewalls and base of the excavation indicated remedial goals had been achieved, the excavation was backfilled with the blended soil. The backfilling and contouring of the site was completed on June 16, 2004.

## **7.0 Closure Justification**

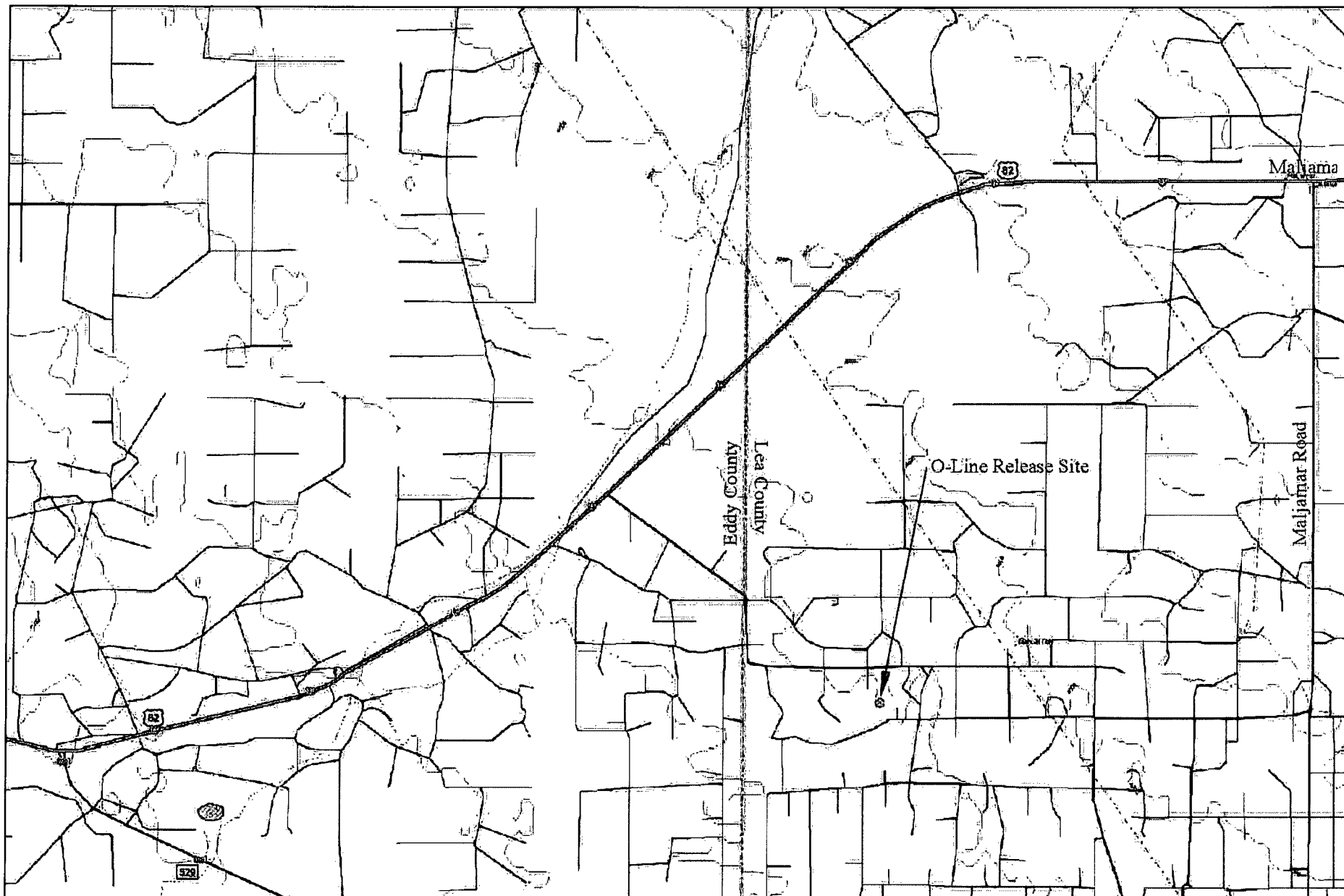
This report documents successful treatment of impacted soil above the remedial thresholds discussed in Section 3 above and confirmed via laboratory analyses for this release site. The only exception was the sample obtained from the south sidewall, which indicated chloride concentrations above the NMOCD remedial thresholds. However, due to the depth to groundwater (i.e., >100 feet), it is suggested that the remaining impacted soil will not impact the groundwater and can be left in place. The impacted soil was excavated and blended with clean soil obtained from the right-of-way and returned to the excavation. 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 and issue a *Site Closure Letter*.

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## FIGURES

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**Figure 1**  
**Area Map**  
**Duke Energy Field Services**  
**O-Line**

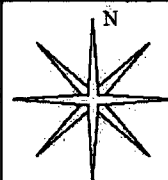
**Lea County, New Mexico**  
 NW 1/4 of the SE 1/4, Sec. 19, T17S, R32E  
 N 32° 49' 3.67" W 103° 48' 8.15"  
 Elevation: 3,935 feet amsl

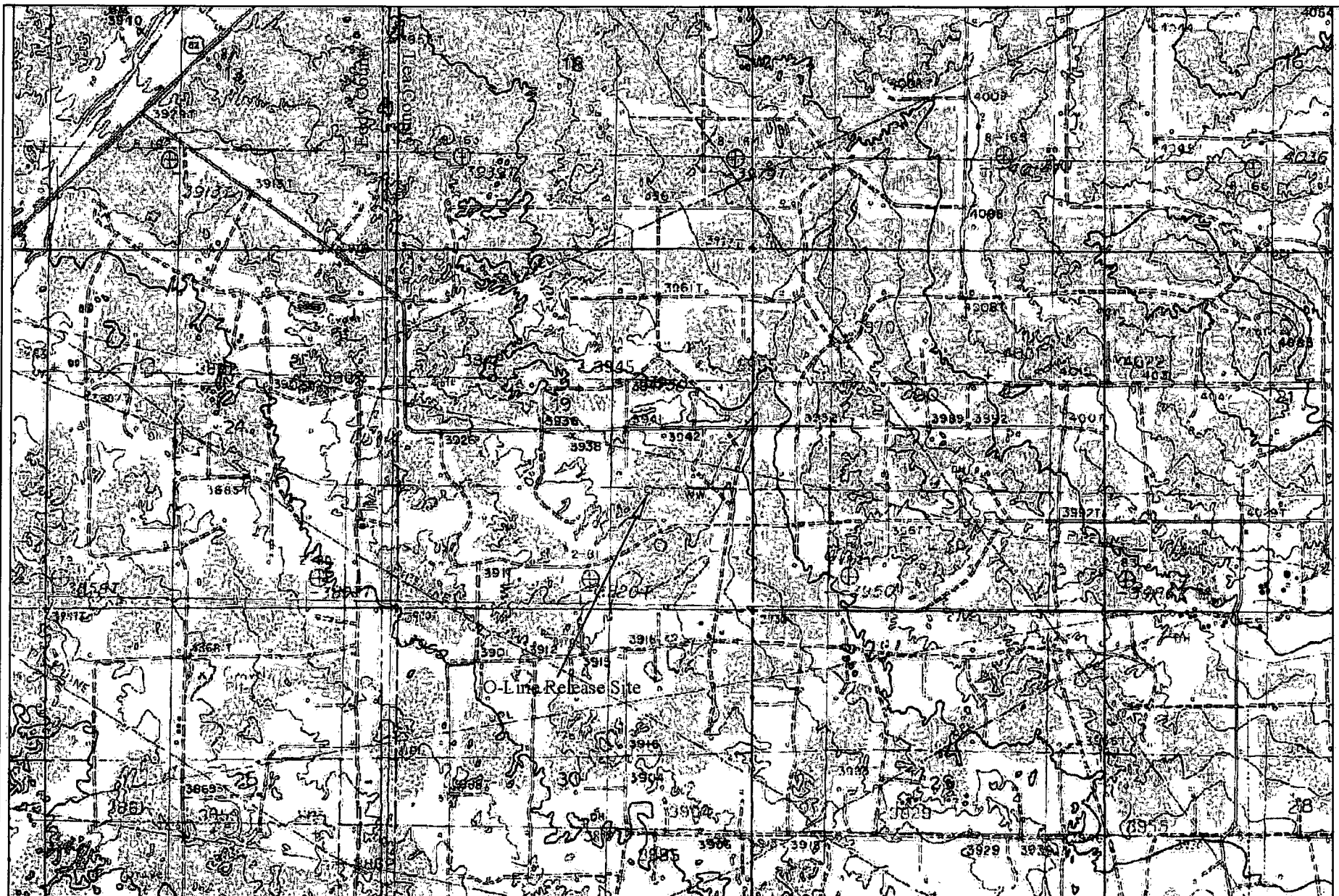
DWG By: Iain Olness  
 June 2004

REVISED:



SHEET  
 1 of 1





**Figure 2**  
**Site Location Map**  
**Duke Energy Field Services**  
**O-Line**

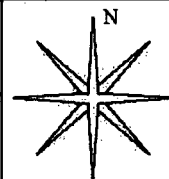
**Lea County, New Mexico**  
**NW 1/4 of the SE 1/4, Sec. 19, T17S, R32E**  
**N 32° 49' 3.67" W 103° 48' 8.15"**  
**Elevation: 3,935 feet amsl**

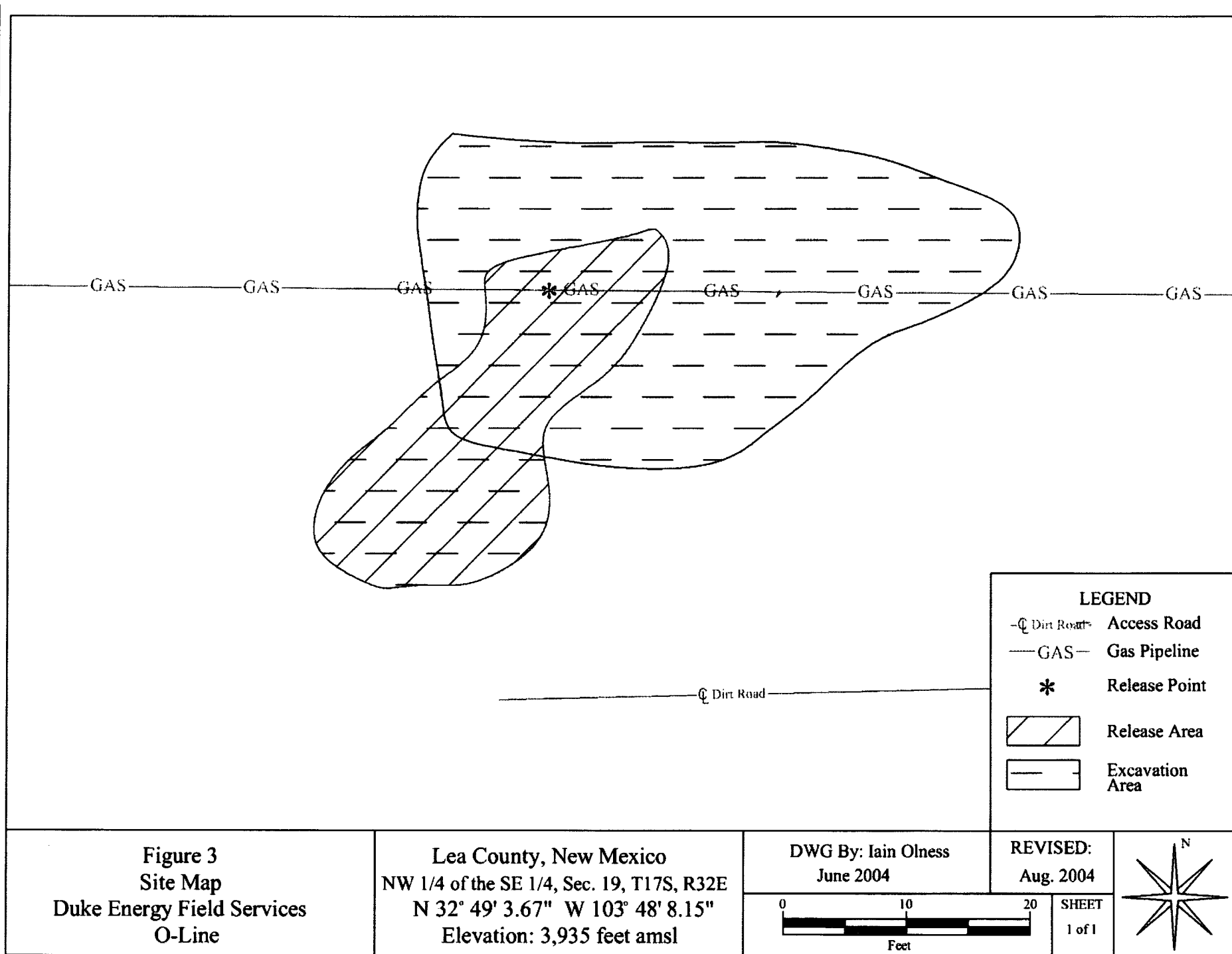
**DWG By: Iain Olness**  
**June 2004**

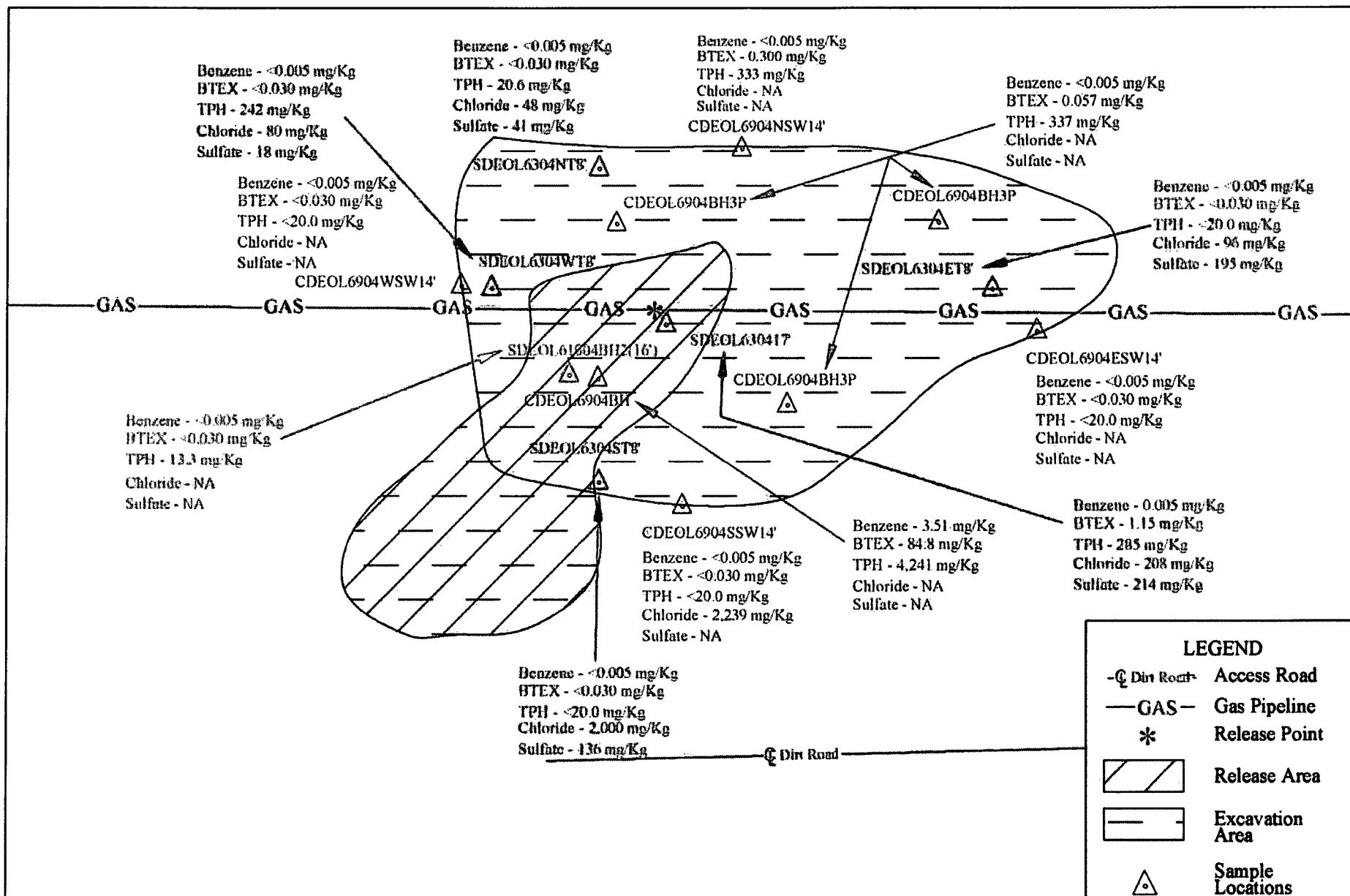
**REVISED:**



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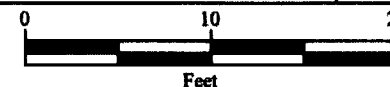


**Figure 4**  
**Sample Location Map**  
**Duke Energy Field Services**  
**O-Line**

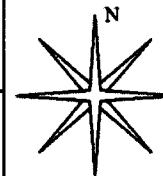
**Lea County, New Mexico**  
 NW 1/4 of the SE 1/4, Sec. 19, T17S, R32E  
 N 32° 49' 3.67" W 103° 48' 8.15"  
 Elevation: 3,935 feet amsl

**DWG By: Iain Olness**  
**June 2004**

**REVISED:**  
**Aug. 2004**



**SHEET**  
**1 of 1**



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## TABLES

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**TABLE 1**  
**Summary of Excavation Analytical Results**

**O-Line - Ref#130003**

Sample ID	Sample Date	Sample Location	Field Analysis (ppm)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	Total BTEX (mg/Kg)	GRO (C6-C10) (mg/Kg)	DRO (>C10-C28) (mg/Kg)	TPH (mg/Kg)	Chloride (mg/Kg)	Sulfate (mg/Kg)
SDEOL630H17	3-Jun-04	Point of Release - 17'	394	0.005	0.090	0.357	0.695	1.15	17.9	267	285	208	214
SDEOL6304BT8	3-Jun-04	North Trench - 8'	64.6	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	20.6	20.6	48	41
SDEOL6304WT8	3-Jun-04	West Trench - 8'	76.7	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	242	242	80	18
SDEOL6304ET8	3-Jun-04	East Trench - 8'	17.6	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	96	195
SDEOL6304ST8	3-Jun-04	South Trench - 8'	6.2	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	2,000	136
CDEOL6904NSW 14	9-Jun-04	North Sidewall - 14'	48.5	<0.005	0.072	0.049	0.179	0.300	<10.0	333	333	NA	NA
CDEOL6904WSW 14	9-Jun-04	West Sidewall - 14'	12.2	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	NA	NA
CDEOL6904SSW 14	9-Jun-04	South Sidewall - 14'	25.7	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	2,239	NA
CDEOL6904ESW 14	9-Jun-04	East Sidewall - 14'	44.2	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	NA	NA
CDEOL6904BH3P	9-Jun-04	Bottomhole - 3 Point Composite	281	<0.005	0.005	0.015	0.037	0.057	<10.0	337	337	NA	NA
CDEOL6904BH	9-Jun-04	Bottomhole - 15'	1,055	3.51	37.3	15.8	28.2	84.8	831	3,410	4,241	NA	NA
SDEOL61004BH12 (16)	10-Jun-04	Bottomhole - 16'	216	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	13.3	13.3	NA	NA
SDEOL61004BC 0-50	10-Jun-04	Blending Cell	387	<0.005	0.022	0.057	0.290	0.369	<10.0	108	108	NA	NA
SDEOL61004BC 50-100	10-Jun-04	Blending Cell	82.7	<0.005	0.006	<0.005	0.048	0.054	<10.0	76.4	76.4	NA	NA
<b>NMOC Remedial Thresholds</b>				<b>10</b>				<b>50</b>			<b>5,000</b>	<b>250</b>	

*BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes*

*GRO = Gasoline Range Organics*

*DRO = Diesel Range Organics*

*TPH = Total Petroleum Hydrocarbons*

*ppm = parts per million, which is equivalent to milligrams per kilogram (mg/Kg)*

*mg/Kg = milligrams per kilogram, which is equivalent to parts per million (ppm)*

*NA = Not Analyzed*

*Red, bold values are in excess of NMOC remedial thresholds*

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**APPENDIX I**

**LABORATORY ANALYTICAL REPORTS**

**AND**

**CHAIN-OF-CUSTODY FORMS**

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# ARDINAL 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

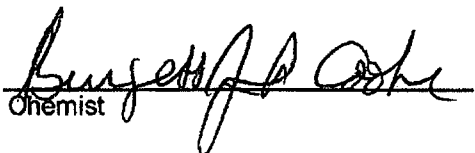
FAX TO:


Receiving Date: 06/03/04  
Reporting Date: 06/05/04  
Project Owner: DUKE ENERGY  
Project Name: DUKE  
Project Location: O-LINE

Sampling Date: 06/03/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NO. SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE	06/04/04	06/04/04	06/04/04	06/04/04
H8786-1 SDEOL6304I7	0.005	0.090	0.357	0.695
H8786-2 SDEOL6304NT8	<0.005	<0.005	<0.005	<0.015
H8786-3 SDEOL6304WT8	<0.005	<0.005	<0.005	<0.015
H8786-4 SDEOL6304ET8	<0.005	<0.005	<0.005	<0.015
H8786-5 SDEOL6304ST8	<0.005	<0.005	<0.005	<0.015
Quality Control	0.096	0.098	0.092	0.274
True Value QC	0.100	0.100	0.100	0.300
% Recovery	95.5	97.7	92.3	91.2
Relative Percent Difference	2.7	3.7	3.7	3.9

METHOD: EPA SW-846 8260

  
Chemist

  
Date

PLEASE 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 client for 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 thirty (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.





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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

ANALYTICAL RESULTS FOR  
ENVIRONMENTAL PLUS, INC.  
ATTN: IAIN OLNES  
P.O. BOX 1558  
EUNICE, NM 88231  
FAX TO:

Receiving Date: 06/03/04  
Reporting Date: 06/05/04  
Project Owner: DUKE ENERGY  
Project Name: DUKE  
Project Location: O-LINE

Sampling Date: 06/03/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC/AH

LAB NO.	SAMPLE ID	GRO	DRO	Cl*
		(C <sub>6</sub> -C <sub>10</sub> )	(>C <sub>10</sub> -C <sub>28</sub> )	
		(mg/Kg)	(mg/Kg)	(mg/Kg)
ANALYSIS DATE		06/04/04	06/04/04	06/04/04
H8786-1	SDEOL6304I7	17.9	267	208
H8786-2	SDEOL6304NT8	<10.0	20.6	48
H8786-3	SDEOL6304WT8	<10.0	242	80
H8786-4	SDEOL6304ET8	<10.0	<10.0	96
H8786-5	SDEOL6304ST8	<10.0	<10.0	2000
Quality Control		790	785	950
True Value QC		800	800	1000
% Recovery		98.8	98.2	95.0
Relative Percent Difference		0.9	7.2	6.0

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl: Std. Methods 4500-ClB

\*Analyses performed on 1:4 w:v aqueous extracts.

Chemist

Date

H8786A.XLS

PLEASE 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 client for 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 thirty (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.



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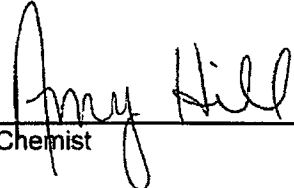
ANALYTICAL RESULTS FOR  
ENVIRONMENTAL PLUS, INC.  
ATTN: IAIN OLNESS  
P.O. BOX 1558  
EUNICE, NM 88231  
FAX TO: (505) 394-2604

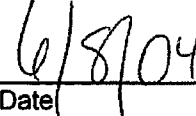
Receiving Date: 06/03/04  
Reporting Date: 06/08/04  
Project Owner: DUKE ENERGY  
Project Name: DUKE  
Project Location: O-LINE

Analysis Date: 06/08/04  
Sampling Date: 06/03/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Sulfate (mg/Kg)
H8786-1	SDEOL630417	214
H8786-2	SDEOL6304NT8	41
H8786-3	SDEOL6304WT8	18
H8786-4	SDEOL6304ET8	195
H8786-5	SDEOL6304ST8	136
Quality Control		48.21
True Value QC		50.00
% Recovery		96.4
Relative Percent Difference		6.2

METHOD: EPA 600/4-79-020 375.4

  
\_\_\_\_\_  
Chemist

  
\_\_\_\_\_  
Date

H8786

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**(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_ of \_\_\_\_

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Sampler Relinquished: <i>Edna J. Harper</i> Date: <i>6-7-04</i> Time:		Received By: Date: Time:		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Add'l Phone #:	
Relinquished By: Date: Time:		Received By: (Lab Staff) <i>Bryan L. Bode</i> Date: Time:		Add'l Fax #:	
Delivered By: (Circle One) <u>Sampler</u> - UPS - Bus - Other:		Sample Condition Cool <input type="checkbox"/> Intact <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>		CHECKED BY: (Initials)	

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



# ARDINAL 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

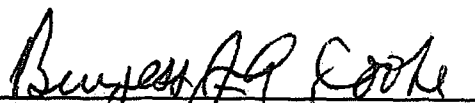
Receiving Date: 06/09/04  
Reporting Date: 06/10/04  
Project Owner: DUKE ENERGY  
Project Name: NOT GIVEN  
Project Location: O-LINE

Sampling Date: 06/09/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NO.	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		06/09/04	06/09/04	06/09/04	06/09/04	06/09/04	06/09/04
H8805-1	CDEOL6904NSW 14	<10.0	333	<0.005	0.072	0.049	0.179
H8805-2	CDEOL6904WSW 14	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H8805-3	CDEOL6904SSW 14	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H8805-4	CDEOL6904ESW 14	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H8805-5	CDEOL6904BH 3P	<10.0	337	<0.005	0.005	0.015	0.037
H8805-6	CDEOL6904BH*	831	3410	3.51	37.3	15.8	28.2
Quality Control		731	799	0.103	0.099	0.093	0.271
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		91.4	99.9	103	99.4	93.4	90.4
Relative Percent Difference		2.4	2.6	7.4	1.7	1.2	0.8

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

\*BTEX run on 06/10/04 as per IO verbal instructions.

  
Burgess J.A. Cooke, Ph. D.

6/10/04  
Date

H8805A.XLS

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# ARDINAL 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

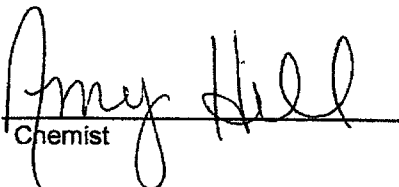
Receiving Date: 06/09/04  
Reporting Date: 06/10/04  
Project Owner: DUKE ENERGY  
Project Name: NOT GIVEN  
Project Location: O-LINE

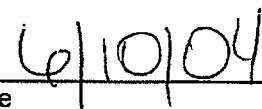
Analysis Date: 06/10/04  
Sampling Date: 06/09/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl <sup>-</sup> (mg/Kg)
H8805-3	CDEOL6904SSW 14	2239
Quality Control		1020
True Value QC		1000
% Recovery		102
Relative Percent Difference		1.0

METHOD: Standard Methods	4500-Cl/B
--------------------------	-----------

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

  
Chemist

  
Date

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## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page \_\_\_\_ of \_\_\_\_

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Sampler Relinquished By: <i>Eddie J. Hagen</i>		Date: <i>6-9-04</i> Time: <i>3:12 PM</i>		Received By: _____		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input type="checkbox"/> Yes <input type="checkbox"/> No	
Relinquished By: _____		Date: _____ Time: _____		Received By: (Lab Staff) <i>Burgess</i>		REMARKS: <i>NUM BTEX on #6 at &lt;5000 TPH on P.I. Iness</i>	
Delivered By: (Circle One) Sampler - UPS - Bus - Other: _____		Sample Condition Temp. °C _____ Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <i>Cool</i>		Checked By: _____ (Initials)			

† Cardinal cannot accept verbal changes. Please fax written changes to (916) 673-7020.



# ARDINAL 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: 06/11/04  
Reporting Date: 06/14/04  
Project Owner: DUKE ENERGY  
Project Name: NOT GIVEN  
Project Location: NOT GIVEN

Sampling Date: 06/10/04-06/11/04  
Sample Type: SOIL  
Sample Condition: COOL & INTACT  
Sample Received By: BC  
Analyzed By: BC

LAB NO.	SAMPLE ID	GRO (C <sub>6</sub> -C <sub>10</sub> ) (mg/Kg)	DRO (>C <sub>10</sub> -C <sub>28</sub> ) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		06/14/04	06/14/04	06/14/04	06/14/04	06/14/04	06/14/04
H8820-1	SDEOL61004BC 0-50	<10.0	108	<0.005	0.022	0.057	0.290
H8820-2	SDEOL61004BC 50-100	<10.0	76.4	<0.005	0.006	<0.005	0.048
H8820-3	SDEOL61004BH2 (16)	<10.0	13.3	<0.005	<0.005	<0.005	<0.015
Quality Control		804	793	0.104	0.107	0.101	0.295
True Value QC		800	800	0.100	0.100	0.100	0.300
% Recovery		101	99.2	104	107	101	98.2
Relative Percent Difference		1.6	1.1	1.5	3.8	0.5	3.6

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

  
Burgess J. A. Cooke, Ph. D.

6/14/04  
Date

H8820.XLS

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**(915) 673-7001 Fax (915) 673-7020 (505) 393-2328 Fax (505) 393-2476**

## CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page        of       

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Sampler Relinquished: <i>Eldon A. Hays</i> Date: <i>6-10-04</i> Time:		Received By: Date: <i>6/11/04</i> Time: <i>2:30</i> Received By: (Lab Staff) <i>Burgess</i>		Phone Result: <input type="checkbox"/> Yes <input type="checkbox"/> No Fax Result: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No REMARKS: <i>IAIN OLNESS</i>	
Relinquished By: <i>Eldon A. Hays</i> Delivered By: (Circle One) Sampler - UPS - Bus - Other:		(Sample Condition Temp, °C) <i>cool</i> Intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Checked By: (Initials)			

† Cardinal cannot accept verbal changes. Please fax written changes to (915) 673-7020.



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**APPENDIX II**

**PROJECT PHOTOGRAPHS**

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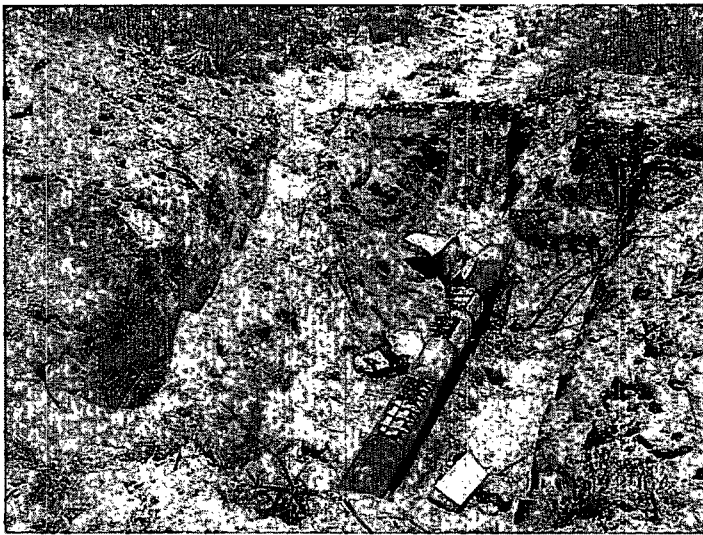


Photo #1: Release area, looking easterly along the pipeline.  
Notice soil staining in bottom of excavation.

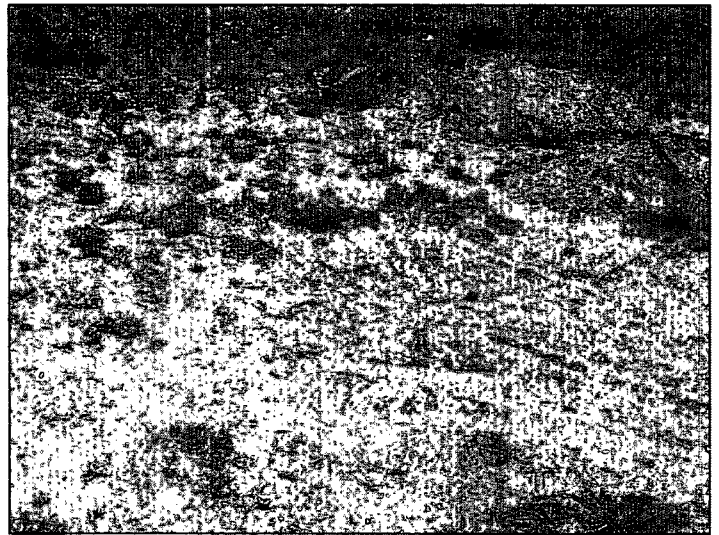


Photo #2: Release area, looking northerly. Notice soil staining in central portion of the photograph.

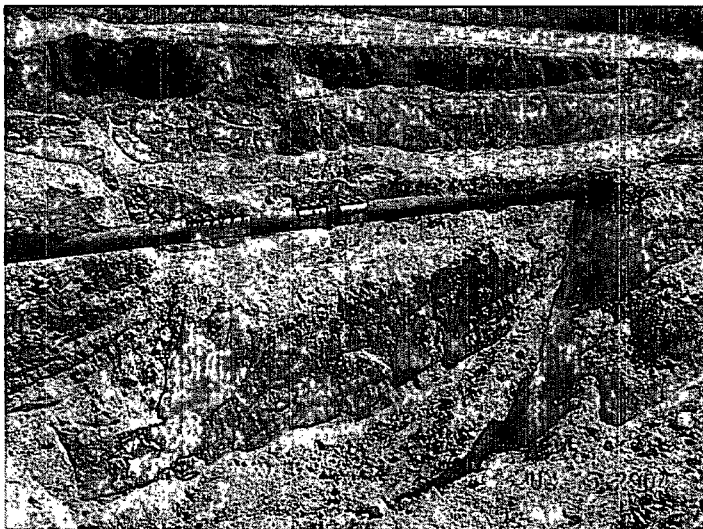


Photo #3: Excavation, looking northerly.



Photo #4: Excavation, looking easterly.

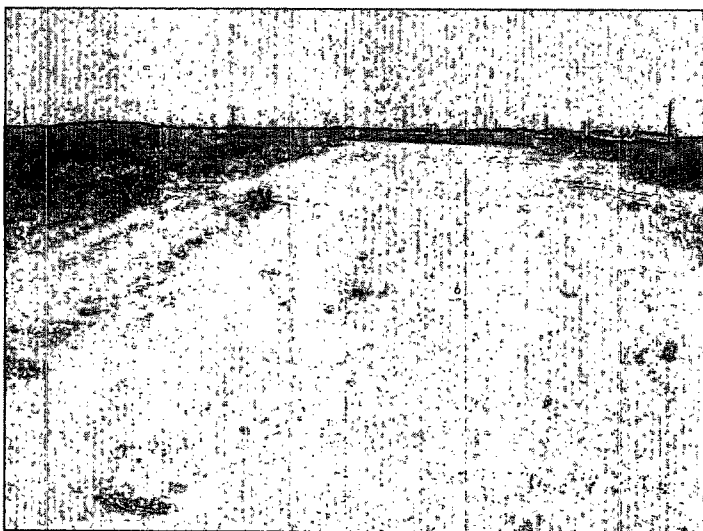


Photo #5: Site graded and contoured, looking westerly.



Photo #6: Site graded and contoured, looking westerly.

---

**APPENDIX III**

**SITE INFORMATION AND METRICS FORM**

**AND**

**FINAL NMOCD C-141 FORM**

---

<b>Duke Energy Field Services Site Information and Metrics</b>		<b>Incident Date:</b> May 20, 2004 @ 1300	<b>NMOCD Notified:</b> May 20, 2004 @ 1345
<b>Site:</b> O Line		<b>Assigned Site Reference #:</b> 130003	
<b>Company:</b> Duke Energy Field Services			
<b>Street Address:</b>			
<b>Mailing Address:</b> 11525 West Carlsbad Highway			
<b>City, State, Zip:</b> Hobbs, New Mexico 88240			
<b>Representative:</b> Paul Mulkey			
<b>Representative Telephone:</b> (505) 397-5716			
<b>Telephone:</b>			
<b>Fluid volume released (bbls):</b> ≈ 20 barrels		<b>Recovered (bbls):</b> ≈ 15 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)			
<b>Leak, Spill, or Pit (LSP) Name:</b> O Line			
<b>Source of contamination:</b> 8" Steel Pipeline			
<b>Land Owner, i.e., BLM, ST, Fee, Other:</b> Bureau of Land Management - Leased by Norman Caswell			
<b>LSP Dimensions:</b> 54 feet by 20 feet			
<b>LSP Area:</b> ≈1,075 ft <sup>2</sup>			
<b>Location of Reference Point (RP):</b>			
<b>Location distance and direction from RP:</b>			
<b>Latitude:</b> N 32° 49' 3.673"			
<b>Longitude:</b> W 103° 48' 8.156"			
<b>Elevation above mean sea level:</b>			
<b>Feet from South Section Line:</b>			
<b>Feet from West Section Line:</b>			
<b>Location- Unit or ¼¼:</b> NW¼ of the SE¼		<b>Unit Letter:</b> J	
<b>Location- Section:</b> 19			
<b>Location- Township:</b> T17S			
<b>Location- Range:</b> R32E			
<b>Surface water body within 1000' radius of site:</b> none			
<b>Domestic water wells within 1000' radius of site:</b> none			
<b>Agricultural water wells within 1000' radius of site:</b> none			
<b>Public water supply wells within 1000' radius of site:</b> none			
<b>Depth from land surface to ground water (DG):</b> >100' below ground surface			
<b>Depth of contamination (DC):</b> Unknown			
<b>Depth to ground water (DG - DC = DtgW):</b> > 100'			
<b>1. Ground Water</b>		<b>2. Wellhead Protection Area</b>	
If Depth to GW <50 feet: <i>20 points</i>		If <1,000' from water source, or, <200' from private domestic water source: <i>20 points</i>	
If Depth to GW 50 to 99 feet: <i>10 points</i>		If >1,000' from water source, or, >200' from private domestic water source: <i>0 points</i>	
If Depth to GW >100 feet: <i>0 points</i>			
<i>Ground water Score = 0</i>		<i>Wellhead Protection Area Score = 0</i>	
<i>Site Rank (1+2+3) = 0</i>		<i>Surface Water Score = 0</i>	
<b>Total Site Ranking Score and Acceptable Concentrations</b>			
Parameter	>19	10-19	0-9
Benzene <sup>1</sup>	10 ppm	10 ppm	10 ppm
BTEX <sup>1</sup>	50 ppm	50 ppm	50 ppm
TPH	100 ppm	1,000 ppm	5,000 ppm
<sup>1</sup> 100 ppm field VOC headspace measurement may be substituted for lab analysis			

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

<b>Name of Company</b> Duke Energy Field Services	<b>Contact</b> Paul Mulkey
<b>Address</b> 11525 West Carlsbad Highway Hobbs, New Mexico 88240	<b>Telephone No.</b> (505) 397-5716
<b>Facility Name</b> O Line	<b>Facility Type</b> 8" Steel Pipeline

<b>Surface Owner</b> Bureau of Land Management - Leased by Norman Caswell	<b>Mineral Owner</b>	<b>Lease No.</b>
--	----------------------	------------------

#### LOCATION OF RELEASE

<b>Unit Letter</b> J	<b>Section</b> 19	<b>Township</b> T17S	<b>Range</b> R32E	<b>Feet from the North/South Line</b>	<b>Feet from the East/West Line</b>	<b>County:</b> Lea Lat. N 32° 49' 3.673" Lon. W 103° 48' 8.156"
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#### NATURE OF RELEASE

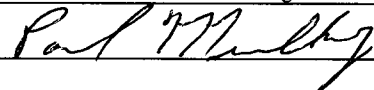
<b>Type of Release</b> Natural Gas Pipeline Fluids	<b>Volume of Release</b> 20 barrels barrels	<b>Volume Recovered</b> 15 barrels barrels
<b>Source of Release</b> 8" Steel Pipeline	<b>Date and Hour of Occurrence</b> May 20, 2004 @ 1300	<b>Date and Hour of Discovery</b> May 20, 2004 @ 1300
<b>Was Immediate Notice Given?</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	<b>If YES, To Whom?</b> Larry Johnson	
<b>By Whom?</b> Lynn Ward of DEFS	<b>Date and Hour</b> May 20, 2004 @ 1345	
<b>Was a Watercourse Reached?</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	<b>If YES, Volume Impacting the Watercourse.</b> NA	

**If a Watercourse was Impacted, Describe Fully.\***  
NA

**Describe Cause of Problem and Remedial Action Taken.\***  
Steel line began leaking due to internal corrosion. Clamp Installed.

**Describe Area Affected and Cleanup Action Taken.\***  
Soil contaminated above the NMOCD Remedial Guidelines blended on site to achieve the following remedial goals: TPH = 5,000 mg/Kg, benzene = 10 mg/Kg, and BTEX = 50 mg/Kg.

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.

<b>Signature:</b> 	<b>OIL CONSERVATION DIVISION</b>	
<b>Printed Name:</b> Paul Mulkey	<b>Approved by District Supervisor:</b>	
<b>E-mail Address:</b> pdmulkey@duke-energy.com		
<b>Title:</b> Maintenance Construction Supervisor	<b>Approval Date:</b>	<b>Expiration Date:</b>
<b>Date:</b> 10/12/04 <b>Phone:</b> (505) 397-5716	<b>Conditions of Approval:</b>	<b>Attached</b> <input type="checkbox"/>

\* Attach Additional Sheets If Necessary