



NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

GARY E. JOHNSON

Governor
Betty Rivera
Cabinet Secretary

Lori Wrotenbery
Director
Oil Conservation Division

December 9, 2002

Mr. Paul Mulkey
Duke Energy Field Services
11525 W. Carlsbad Hwy
Hobbs, NM 88240

pdmulkey@duke-energy.com

Re: Closure Approval, D-2-1 Release Site
Site Reference UL-P, Sec-11 T-18S R-38E
Initial Notification Date: September 17, 2002
Closure Request Dated: December 3, 2002

Dear Mr. Mulkey,

The **Final Closure Document** submitted to the New Mexico Oil Conservation Division (OCD) by Environmental Plus, Inc. for Duke Energy Field Services is **hereby approved**. A copy of the follow up report of the natural attenuation evaluation to be conducted in May or June of 2003 would be appreciated. According to the information provided, no further action is required at this time.

Please be advised that OCD approval does not relieve Duke Energy Field Services of liability should remaining contaminants pose a future threat to 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 feel free to call me at (505) 393-6161, x111 or email lwjohnson@state.nm.us

Sincerely,

Larry Johnson - Environmental Engineer

Cc: Roger Anderson - Environmental Bureau Chief
Chris Williams - District I Supervisor
Bill Olson - Hydrologist
Paul Sheeley-Environmental Engineer

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 Duke Energy Field Services	Contact Paul Mulkey
Address 11525 West Carlsbad Hwy, Hobbs, NM 88240	Telephone No. 505-397-5716
Facility Name D-2-1 Line	Facility Type Natural Gas Pipeline

Surface Owner VMJ, Inc. (Vernon M. Jones)	Mineral Owner NA	Lease No. NA
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LOCATION OF RELEASE

Unit Letter P	Section 11	Township 18S	Range 38E	Feet from South Line 550	Feet from West Line 4612	Longitude W103:06:45.38	Latitude N32:45:22.91	County: Lea
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NATURE OF RELEASE

Type of Release Natural Gas and associated liquid components	Volume of Release >15 bbl	Volume Recovered 0 bbl
Source of Release Steel Natural Gas Pipeline	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 09/17/02 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NA	
By Whom? NA	Date and Hour NA	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. NA	
If a Watercourse was Impacted, Describe Fully.* NA		
Describe Cause of Problem and Remedial Action Taken.* Internal pipeline corrosion, pipe section removed, looped, eventual replacement planned.		
Describe Area Affected and Cleanup Action Taken.* ~9600-ft² surface area affected (3 releases + flowpath). Remediation documentation attached.		

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: <i>Paul Mulkey</i>	OIL CONSERVATION DIVISION	
Printed Name: Paul Mulkey	Approved by District Supervisor:	
Title: Construction & Maintenance Supervisor	Approval Date:	Expiration Date:
Date: 12/3/02 Phone: 505-397-5716	Conditions of Approval: <input type="checkbox"/> Attached	

Attach Additional Sheets If Necessary

DUKE ENERGY FIELD SERVICES



IRP-69
10-5-05

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

D-2-1 RELEASE SITE

DEFS REF: D-2-1 091702

UL-P SE¼ OF THE SE¼ OF SECTION 11 T18S R38E

~2.3 MILES NORTHEAST OF HOBBS

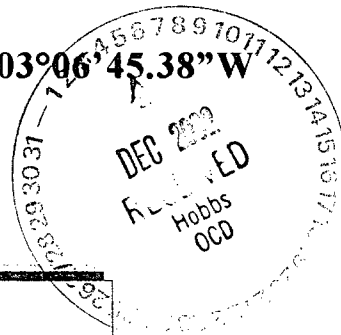
LEA COUNTY, NEW MEXICO

LATITUDE: 32°45'22.91"N

LONGITUDE: 103°06'45.38"W

DECEMBER 3, 2002

PREPARED BY: JCG



Environmental Plus, Inc.

2100 Avenue O

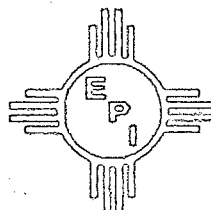
P.O. Box 1558

Eunice, NM 88231

Phone: (505)394-3481

FAX: (505)394-2601

ENVPLUS1@AOL.com





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

December 3, 2002

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 – D-2-1 091702 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 “D-2-1 091702” remediation site. This report documents the vertical and horizontal extents of hydrocarbon and inorganic constituent contamination at the site, removal of contaminated soils above acceptable CoC levels, and the disposal of said contaminated soils in a NMOCD approved land farm consistent with the Initial C-141 and Remediation Plan submitted to NMOCD on September 19, 2002. EPI, on behalf of DEFS, therefore 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.

All official correspondence should be addressed to:

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

Sincerely,

John Good, Environmental Consultant

cc: Paul Mulkey, Duke Energy Field Services, w/enclosure
Eddie Seay, Environmental Consultant to VMJ, Inc.
Sherry Miller, EPI President
Ben Miller, EPI Vice President and General Manager
Pat McCasland, EPI Technical Manager
File

ENVIRONMENTAL PLUS, INC.

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Executive Summary

Environmental Plus, Inc. (EPI) was notified by Duke Energy Field Services (DEFS) on 17-Sept-02 regarding a pipeline release site involving DEFS' "D-2-1" 8-inch natural gas gathering pipeline. DEFS' initial C-141 (17-Sept-02) indicates a natural gas liquid (NGL) release in excess of 15 bbl. The leak was a result of internal pipeline corrosion. Repairs were made on the 8-inch steel pipeline line at two locations within the exposed pipeline section by clamping. Ultimately the pipeline was looped around the project site.

Characterization and remedial work at the site was done by EPI during the period 17-Sept-02 through 25-Nov-02. The "D-2-1 091702" site is located ~2.3-miles northeast of Hobbs, NM, in UL-P, Section 11 T18S R38E. The spill occurred on property owned by VMJ, Inc. (Vernon M. Jones of Moran, TX). The surface extent of the 9-17-02 reported spill was approximately 4,022-ft² plus an additional overspray area of approximately 22,000-ft² (see Plate 3, Attachments). The vertical extent of contamination ranged from 13-ft in Excavation-A to 4-ft in Excavation-C and the flow path.

EPI excavated and disposed of 1,904-yd³ of contaminated soil from the site commencing on 17-Sept-02. Composite bottom-hole and sidewall soil samples were submitted to Cardinal Laboratories, Hobbs, NM on 17-Oct-02 and 07-Nov-02. Results of these analyses confirmed that TPH, BTEX, and Benzene levels were below threshold levels throughout the site, and that chloride levels were within acceptable limits (~250 mg/kg) so as to not pose a threat to any ground water present. Calcium sulfate levels in Excavation-B remain above the NMWQCC ground water standard of 600 ppm. Due to the depth to ground water at the site (> 50-ft) and the insolubility of calcium sulfate in alkaline soils, EPI determined that leaving the sulfate containing soil in place would pose no potential danger to the ground water beneath 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 "D-2-1 091702" natural gas 8" gathering line remediation site. EPI was notified on September 17, 2002 by DEFS regarding a natural gas and associated NGL release at this site. The initial C-141 Form submitted to NMOCD (19-Sept-02) reports the release volume (NGL) as 15 bbl. EPI responded the same day (9-17-02) 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 area ~100-ft X ~20-ft associated with the Point of Release (POR) and a linear surface flow area extending south from the POR ~300-ft. The total release affected area comprised ~4,022-ft² in addition to an overspray area of ~22,000-ft² extending south-eastward from the POR. Subsequent to the initial excavation activities at the site, two historical release sites were noted approximately 100-ft and 200-ft west of the reported site. DEFS management advised EPI to excavate and remediate these two additional sites and include them in the overall scope of the project. The excavations were now designated A, B and C (from east to west), with the flow path extending south from Excavation A. Remediation of the three release sites and the flow path consisted of excavation and disposal of contaminated soil, soil analyses, backfilling and contouring of the excavations. Remediation of the site was completed on 25-Nov-02.

2.0 Background

The site is associated with the DEFS D-2-1 natural gas 8" pipeline. This release site is located in Unit Letter P, (SE¼ of the SE¼), Section 11, T18S, R38E, (32°45'22.91"N and 103°06'45.38"W), and approximately 2.3 miles northeast of Hobbs, NM. The property is owned by VMJ, Inc. (Vernon M. Jones) of Moran, TX. A location map, topographical map of the site and detailed GPS site diagrams are included as Attachments.

The natural gas and associated NGL release at this site was discovered and reported on 17-Sept-02. The leak was the result of internal pipe corrosion. The pipe was initially clamped and repaired by DEFS personnel. Ultimately, the line was looped around the section with integrity problems and will be replaced with a new section of steel or poly pipe.

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 in 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 (*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 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 conservatively estimated to be 65-ft to 80-ft bgs. The site is located in the High Plains (Llano Estacado) physiographic area approximately 2.3-miles northeast of Hobbs, NM. Water Column Reports obtained from the NM State Engineers Office indicate average water depths 65-ft to 80-ft bgs in the north-east quadrant of Township 18S; Range 38E. Ground water gradient in this area is generally to the southeast. (Plate 5 in the Attachments is a summary of the average water depths in the nine sections comprising the NE quadrant of T18S; R38E).

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 10 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 = 10	Wellhead Protection Score= 0	Surface Water Score= 0	
Site Rank (1+2+3) = 10 + 0 + 0 = 10 points (for soil 0-15'bgs)			
Total Site Ranking Score and Acceptable Remedial Goal Concentrations			
Parameter	20 (soil > 15' bgs)	10 (soil 0 – 15'bgs)	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 first subsurface soil samples were composite samples taken from the bottoms and sidewalls of Excavations A, B and C on 10-16-02, and from the flow path and pooling area on 10-17-02. Lab analyses results of this first sampling event confirmed the following:

- ◆ The flow path and south pooling area retained no hydrocarbon, chloride or sulfate contamination above the remedial goals.
- ◆ The bottom (12-ft) of Excavation-A retained a chloride concentration of 416 ppm, above the ground water standard of 250 ppm.
- ◆ The bottom (10-ft) and all sidewalls of Excavation-B retained chloride concentrations > 250 ppm and sulfate concentrations greater than the ground water standard of 600 ppm. All hydrocarbon contamination in this excavation was below remedial goals at this excavation extent.
- ◆ The east sidewall of Excavation-C retained a TPH concentration > 1000 ppm. The east and south sidewalls retained sulfate concentrations > 600 ppm.

Based on the above findings, the excavations were extended as follows:

Excavation-A was further excavated down to 13-ft bgs to achieve chloride levels < 250 ppm.

Excavation-B was further excavated down to 12-ft bgs, and all sidewalls were extended 3-ft to achieve chloride levels < 250 ppm and sulfate levels < 600 ppm.

Excavation-C was not excavated beyond the 4-ft depth; all sidewalls were extended 4-ft to achieve TPH levels < 1000 ppm and sulfate levels < 600 ppm.

The three excavations were re-sampled on 11-07-02. Lab analyses results of this sampling event indicated the following:

- ◆ Excavations-A and -C were below remedial goals for hydrocarbons, chloride and sulfate.
- ◆ Excavation-B retained a bottom hole (12-ft) sulfate concentration of 1800 ppm. Retained sidewall chloride concentrations ranged from 32 ppm to 320 ppm; and sidewall sulfate concentrations ranged from 18 ppm to 3700 ppm.

Laboratory analytical reports, a summary table of all analytical results and graphical representations of the analytical data are provided in the Attachments.

6.0 Ground Water Investigation

Ground water depth is estimated to be 65-ft to 80-ft bgs at the site. The site was excavated to a maximum depth of 13-ft (Excavation-A). Final CoC levels of the bottom-hole and sidewalls of the excavation(s) were analyzed to be within the following ranges: TPH – 0 to 163 ppm; Benzene – 0 to 0.005 ppm; BTEX – 0 to 0.030 ppm; Chloride - 32 ppm to 320 ppm; Sulfate – 18 ppm to 3701 ppm.

The excavation was backfilled with clean caliche and topsoil obtained from the property owner. Based on the removal the Constituents of Concern and the immobility (see 6.1 below) of the calcium sulfate left in place in Excavation-B, there will be no need for further ground water investigation at this site.

6.1 Sulfate Mobility

The high $\text{SO}_4^{=}$ ion concentrations displayed in many natural gas and/or crude oil release sites are a direct result of the chemical reaction between the hydrogen sulfide (H_2S) associated with the released hydrocarbons and the calcium carbonate (CaCO_3) predominantly present as caliche in the subsurface strata overlying the aquifer(s) of Southeast New Mexico and West Texas. The ultimate products of this chemical reaction are hydrated calcium sulfate ($\text{CaSO}_4 \cdot \text{H}_2\text{O}$) and carbon dioxide (CO_2). Hydrated calcium sulfate is better known as the common mineral gypsum. Calcium sulfate is soluble in water, however, only very slightly in an alkaline environment. With soil pH levels of 8.0+, calcium sulfate is essentially insoluble, thus immobile, when considering the possibility of leaching the sulfate vertically downward towards any existing ground water aquifer. It is EPI's standard operating procedure to leave sulfate contaminated soils in place if the only constituent of concern is the sulfate component at concentrations above the ground water standard of 600 ppm. The expense of excavation and disposal of a basically immobile contaminant ion is not justified when sulfate is the only constituent of concern.

7.0 Remediation

Remediation of the site commenced on 17-Sept-02 and continued through 25-Nov-02. Remediation of the site consisted of excavation and disposal of 1904 yd³ of contaminated soil from the three excavations (A, B and C), and the shallow excavation of the southerly flow path emanating from the Excavation-A 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 three excavations at the site were backfilled up to 18-inches below surface level with clean caliche purchased from the land owner. The top 18-inches of each excavation and the southerly flow path were backfilled with clean topsoil purchased from the land owner. 18-inches of topsoil was removed from the southern and western lateral extents of Excavation-B, and replaced with clean topsoil. This was done to remove high sulfates in the root-zone, thus facilitating re-vegetation of the area.

The excavated areas (A, B, C and flow path) were composite sampled initially on the 16th and 17th of October. Analyses indicated that further excavation was necessary to achieve remedial goals in the three excavations. Additional soil was removed from each excavation and re-sampling was performed on 7-Nov. Analyses of these samples indicated attainment of remedial goals with the exception of high sulfates remaining in Excavation-B (as discussed in Section 6.1).

The surface damaged area of the project was determined by GPS to be 70,000-ft². As regards the 22,000-ft² overspray area, it was agreed with the land owner's environmental consultant (Mr. Eddie Seay) to not disturb the area and evaluate natural attenuation in May or June 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.

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Plate 1: Site Location Map

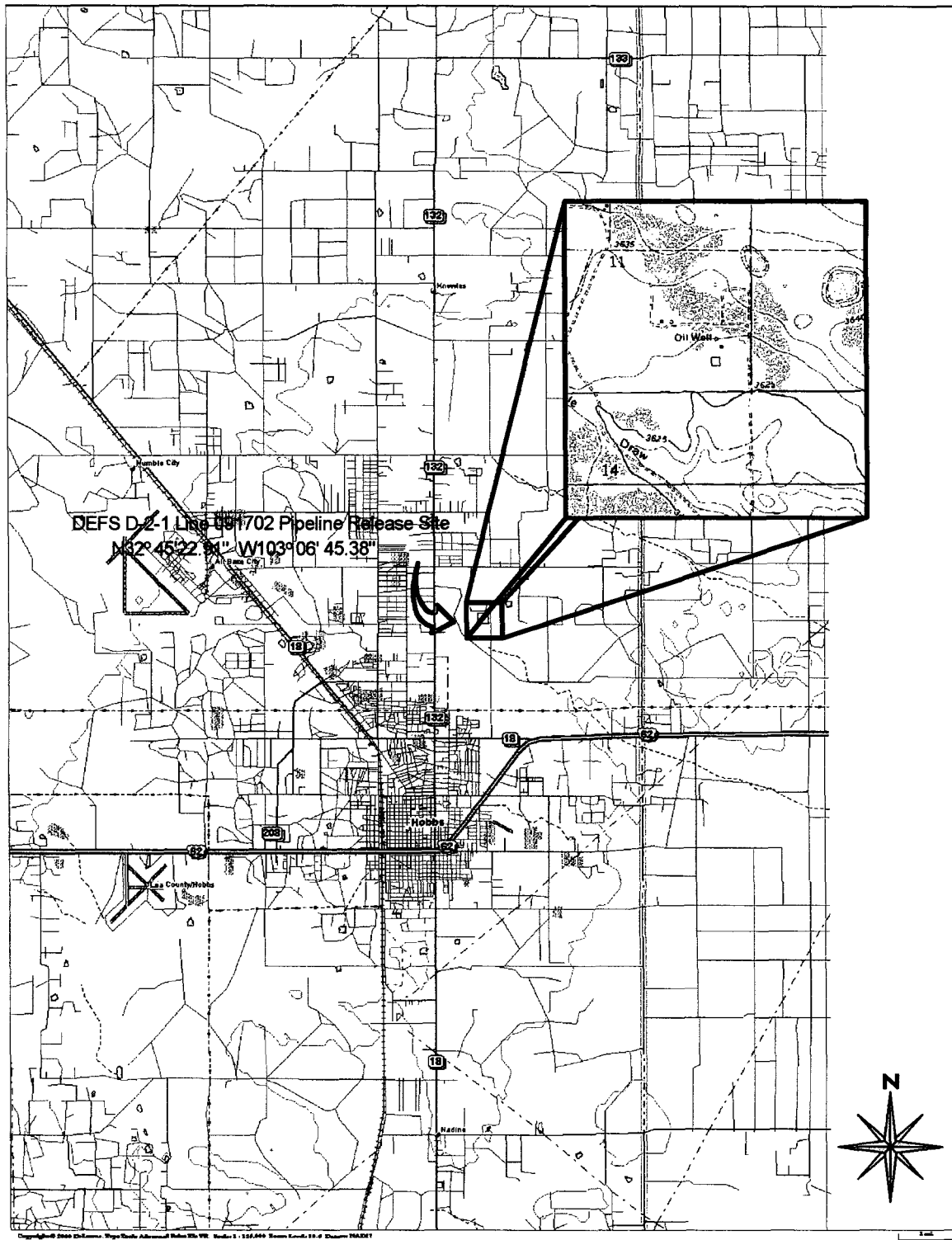


Plate 1: Release Site Location

Duke Energy Field Services - D-2-1 Line 091702
 Lea County, NM; UL-P Section 11 T18S R38E



Plate 2: Site Topography Map

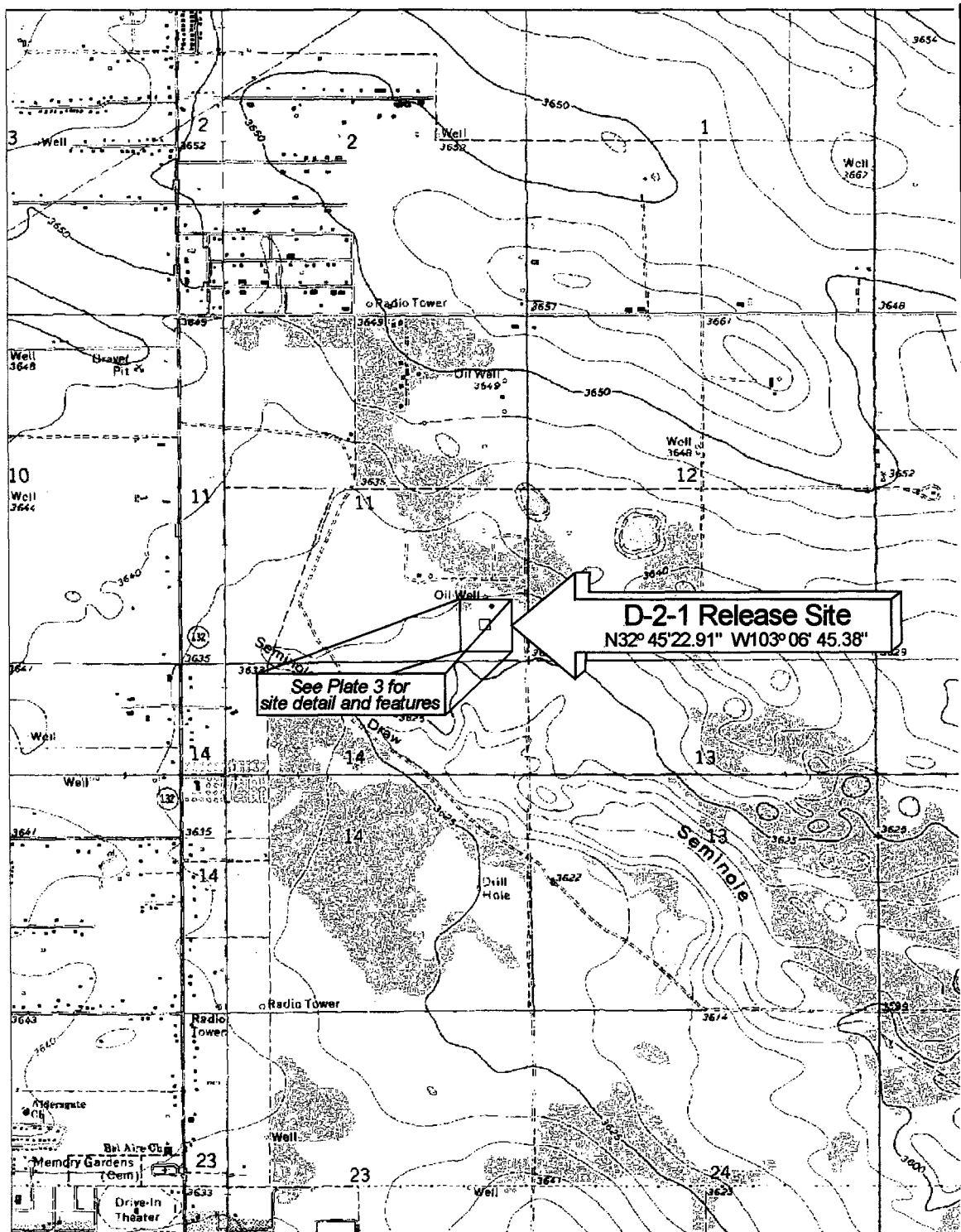


Plate 2: Site Topography and Release Location

Duke Energy Field Services - D-2-1 Line 091702
Lea County, NM; UL-P Section 11 T18S R38E



Plate 3: Initial GPS Demarcation with Site Features

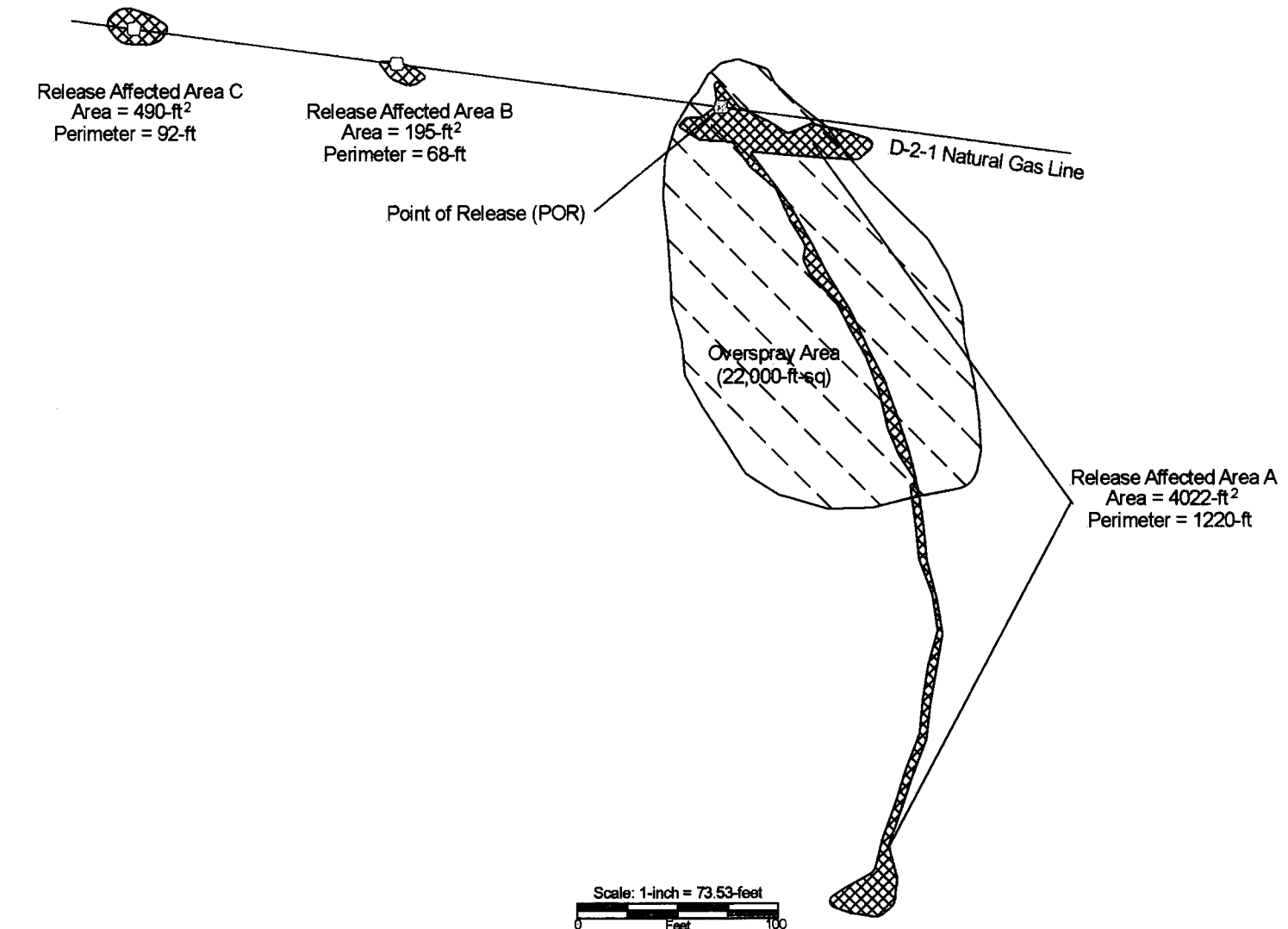
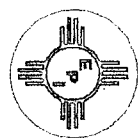


Plate 3: Release Site Initial GPS Demarcation
 Duke Energy Field Services - D-2-1 Line 091702
 Lea County, NM; UL-P Section 11 T18S R38E
 Drawn By: JCG Date: Sept-02 Revised: Oct-02



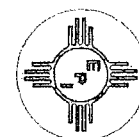
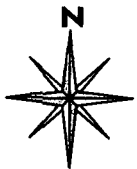
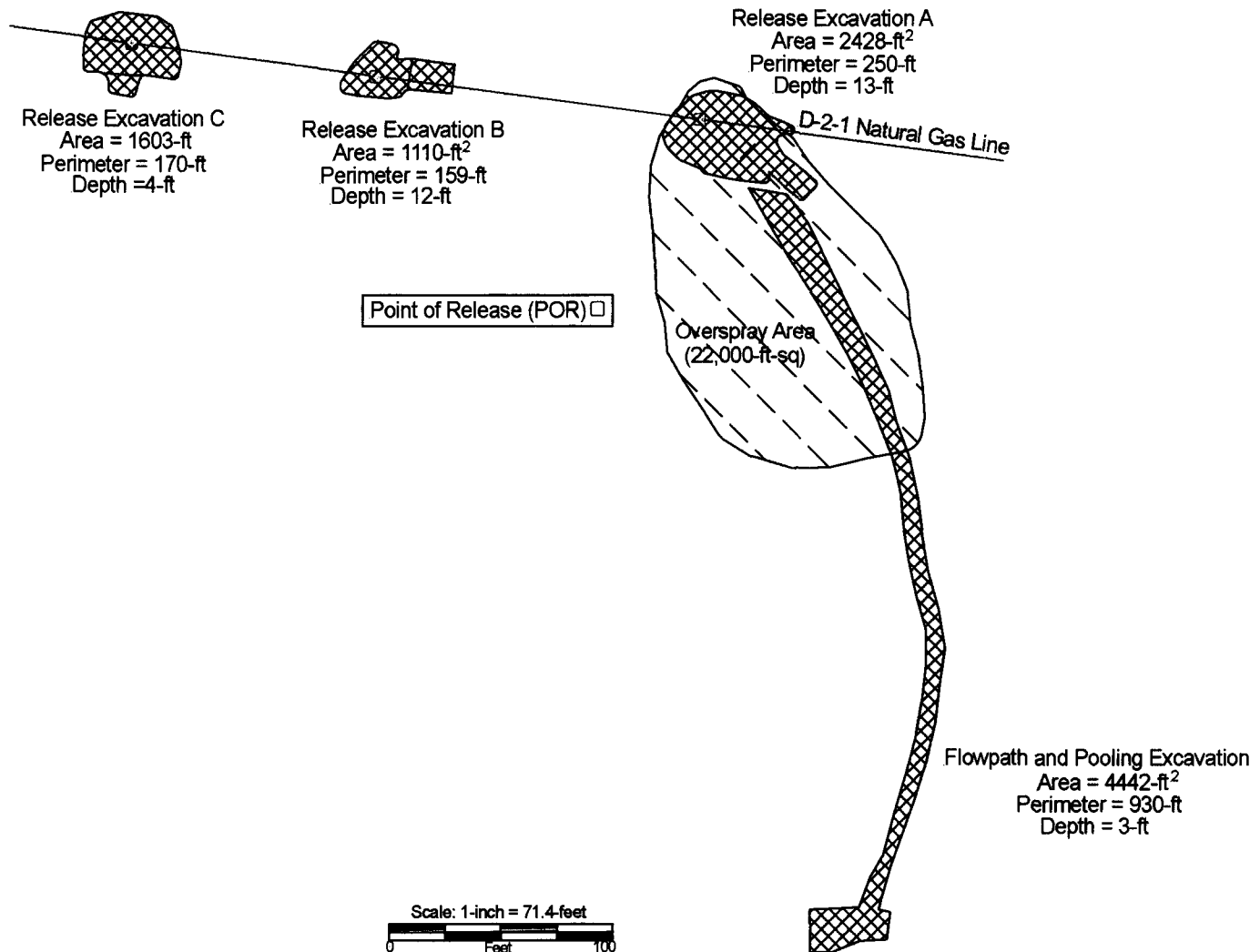


Plate 4: Excavation(s) Final GPS Demarcation
Duke Energy Field Services - D-2-1 Line 091702
Lea County, NM; UL-P Section 11 T18S R38E

Drawn By: JCG Date: Oct-02 Revised: Oct-02

Plate 5 – Nine Section Ground Water Depth Summary

Number of Wells = 163 3 61.5 Avg Water Depth	Number of Wells = 175 2 65.5 Avg Water Depth	Number of Wells = 13 1 74.1 Avg Water Depth
Number of Wells = 212 10 66.3 Avg Water Depth	Number of Wells = 15 11 79.8 Avg Water Depth	Number of Wells = 6 12 68.5 Avg Water Depth
Number of Wells = 282 15 65.4 Avg Water Depth	Number of Wells = 28 14 66.3 Avg Water Depth	Number of Wells = 2 13 38 Avg Water Depth
896 Total wells; Average Water Depth = 65.3-ft		

Duke Energy Field Services - D-2-1 091702 - Excavation Sampling Results

Bold highlighted cells indicate values in excess of the NMOCD remedial thresholds: TPH = 100 or 1000 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#	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	pH
17-Oct	FlowPath North	2-ft	DD21101702FPN	10	153	183	0.030	0.005	0.005	0.005	0.015	144	109	8.29
17-Oct	FlowPath South	2-ft	DD21101702FPS	10	12	22	0.030	0.005	0.005	0.005	0.015	256	56	7.86
17-Oct	FlowPath Pool Area	2-ft	DD21101702POOL	10	10	20	0.030	0.005	0.005	0.005	0.015	144	52	8.74
Excavation A														
16-Oct	BottomHole	12-ft	DD21A101602BHC	10	27	37	0.030	0.005	0.005	0.005	0.015	416	68	7.29
8-Nov	BottomHole	13-ft	SDD21110802ABHC-13									144		
16-Oct	SideWall - South	8-12-ft	DD21A101602SSW	10	29	39	0.030	0.005	0.005	0.005	0.015	64	55	7.79
16-Oct	SideWall - East	8-12-ft	DD21A101602ESW	10	10	20	0.030	0.005	0.005	0.005	0.015	176	135	7.69
16-Oct	SideWall - North	8-12-ft	DD21A101602NSW	10	10	20	0.030	0.005	0.005	0.005	0.015	96	221	7.80
16-Oct	SideWall - West	8-12-ft	DD21A101602WSW	10	16	26	0.030	0.005	0.005	0.005	0.015	128	414	7.98
Excavation B														
16-Oct	BottomHole	10-ft	DD21B101602BHC	10	10	20	0.030	0.005	0.005	0.005	0.015	752	9049	7.85
21-Oct	BottomHole	12-ft	SDD21102102BBH-12									736	217	8.65
7-Nov	BottomHole	12-ft	SDD21110802BBHC-12									144	1858	
21-Oct	BottomHole	14-ft	SDD21102102BBH-14									784	46	8.69
16-Oct	SideWall - South	6-10-ft	DD21B101602SSW	10	10	20	0.030	0.005	0.005	0.005	0.015	938	9182	7.81
7-Nov	SideWall - South	8-12-ft	SDD21110802BSSWC									320	3701	
16-Oct	SideWall - East	6-10-ft	DD21B101602ESW	10	10	20	0.030	0.005	0.005	0.005	0.015	928	1126	7.95
7-Nov	SideWall - East	8-12-ft	SDD21110802BESWC									32	18	
16-Oct	SideWall - North	6-10-ft	DD21B101602NSW	10	10	20	0.030	0.005	0.005	0.005	0.015	400	42	8.03
7-Nov	SideWall - North	8-12-ft	SDD21110802BNSWC									320		
16-Oct	SideWall - West	6-10-ft	DD21B101602WSW	10	10	20	0.030	0.005	0.005	0.005	0.015	672	740	8.00
7-Nov	SideWall - West	8-12-ft	SDD21110802BWSWC									128		
Excavation C														
16-Oct	BottomHole	4-ft	DD21C101602BHC	10	24	34	0.030	0.005	0.005	0.005	0.015	48	295	8.00
7-Nov	BottomHole	4-ft	SDD21110802CBHC-4	10		10						48	29	
16-Oct	SideWall - South	2-4-ft	DD21C101602SSW	10	664	674	0.030	0.005	0.005	0.005	0.015	64	1838	7.87
7-Nov	SideWall - South	2-4-ft	SDD21110802CSSWC	10	10	20							67	
16-Oct	SideWall - East	2-4-ft	DD21C101602ESW	10	1340	1350	0.030	0.005	0.005	0.005	0.015	80	2084	7.82
7-Nov	SideWall - East	2-4-ft	SDD21110802CESWC	10	10	20							18	
16-Oct	SideWall - North	2-4-ft	DD21C101602NSW	10	193	203	0.030	0.005	0.005	0.005	0.015	64	448	7.97
7-Nov	SideWall - North	2-4-ft	SDD21110802CNSWC	10	10	20								
16-Oct	SideWall - West	2-4-ft	DD21C101602WSW	10	409	419	0.030	0.005	0.005	0.005	0.015	64	288	7.90
7-Nov	SideWall - West	2-4-ft	SDD21110802CNSWC	10	10	20								
17-Oct	Background	Surface	DD21101602BG									80	308	8.43

¹ bgs = below ground surface ³ GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) ⁴ DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg)

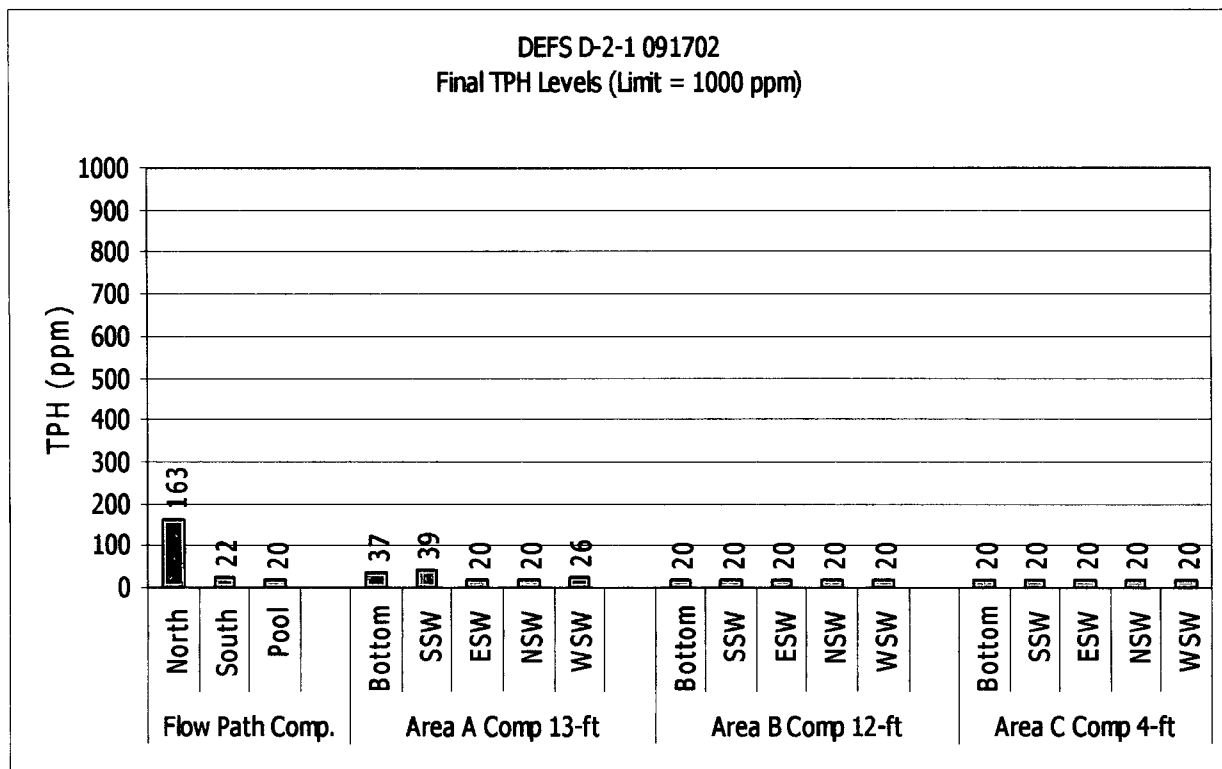
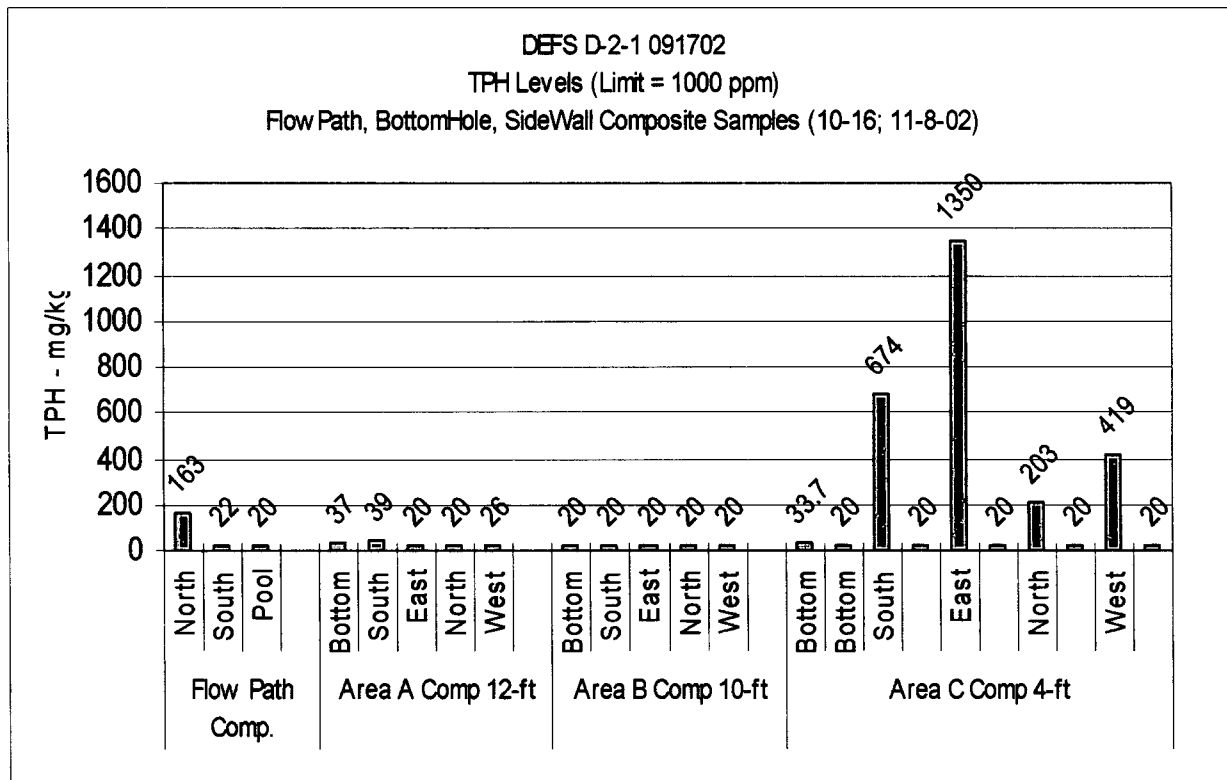
³ GRO - Gasoline Range Organics (Detection Limit = 10 mg/Kg) ⁴ DRO - Diesel Range Organics (Detection Limit = 10 mg/Kg) ⁵ TPH - Total Petroleum Hydrocarbon (GRO+DRO)

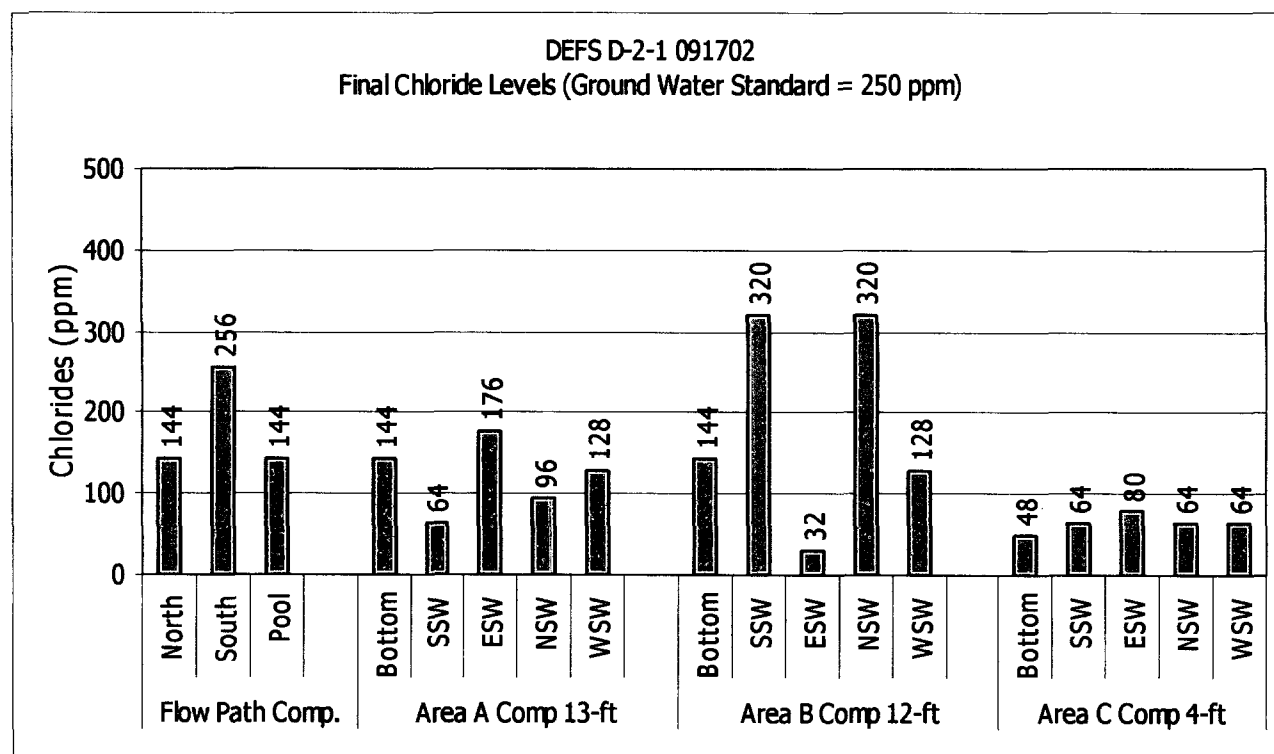
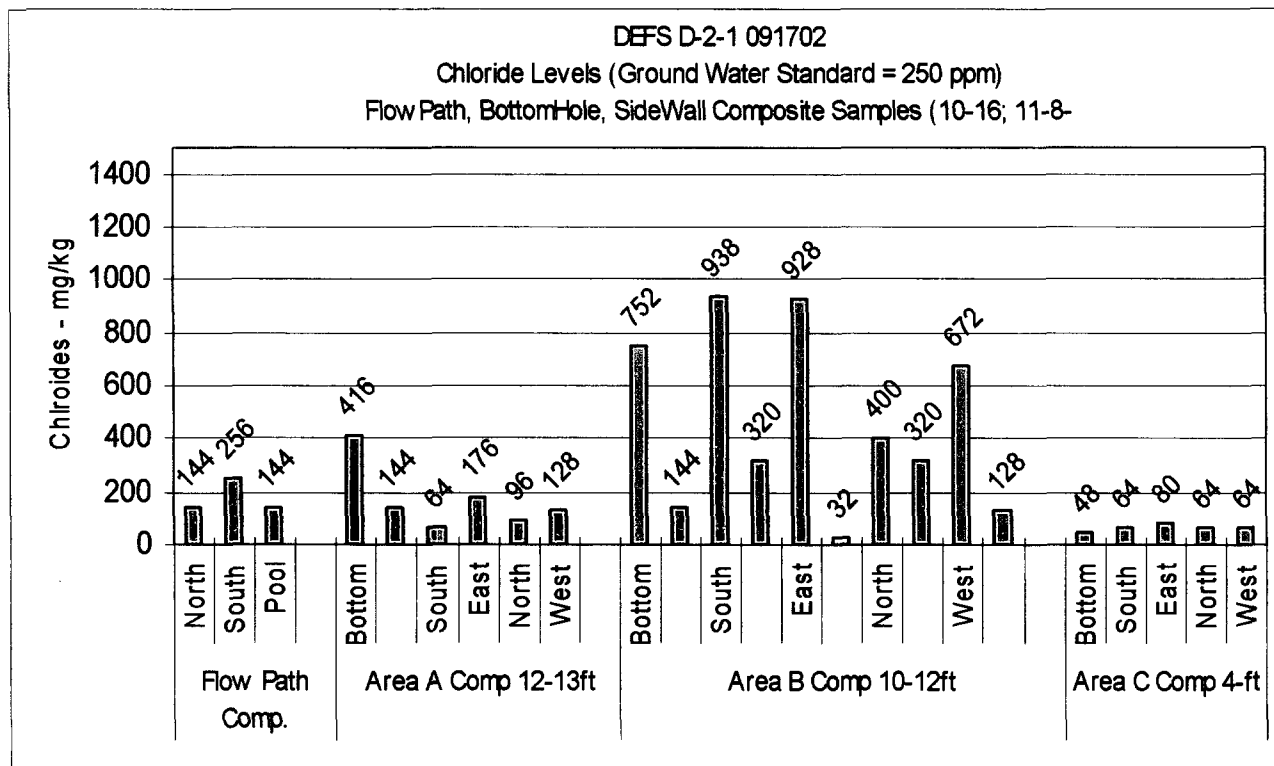
⁶ BTEX = Sum of CoC's (Detection Limits = 0.005 mg/Kg; 0.015 mg/Kg) Note: Reported detection limits are considered "de minimus" values and are included in the TPH and BTEX summations.

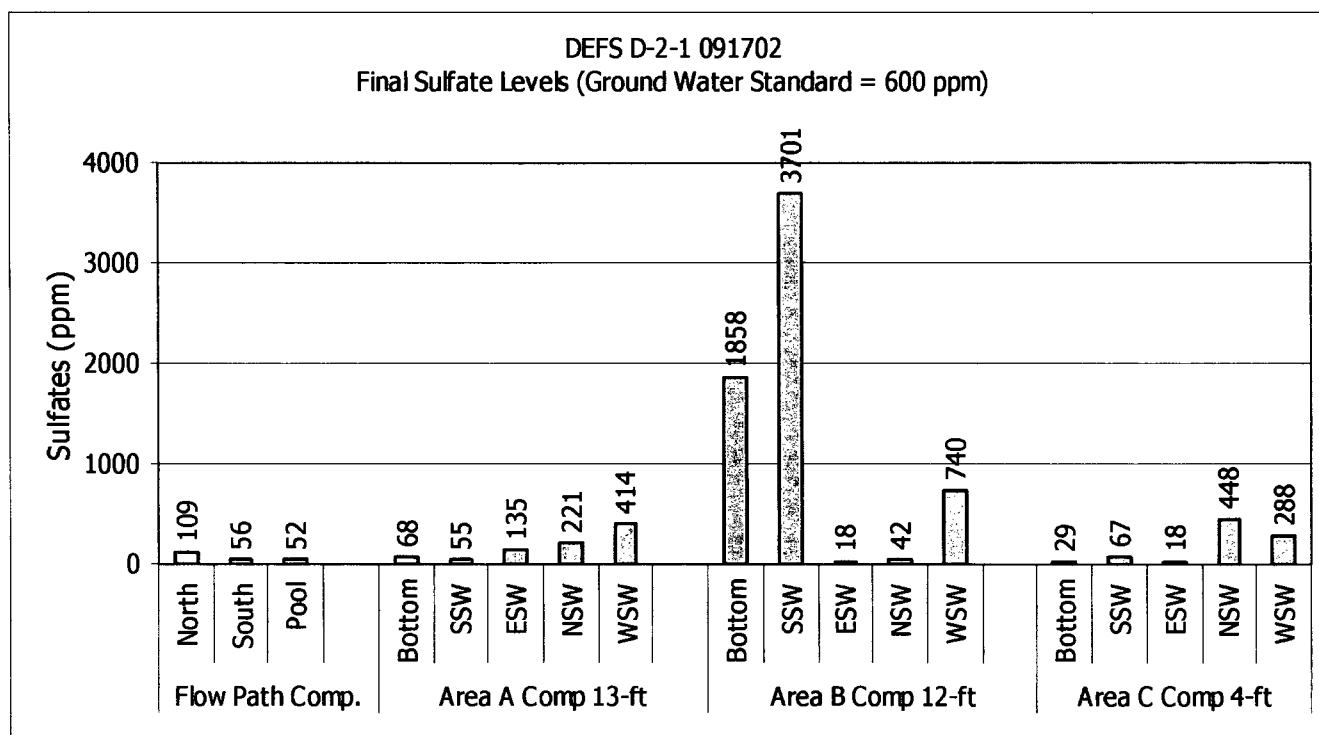
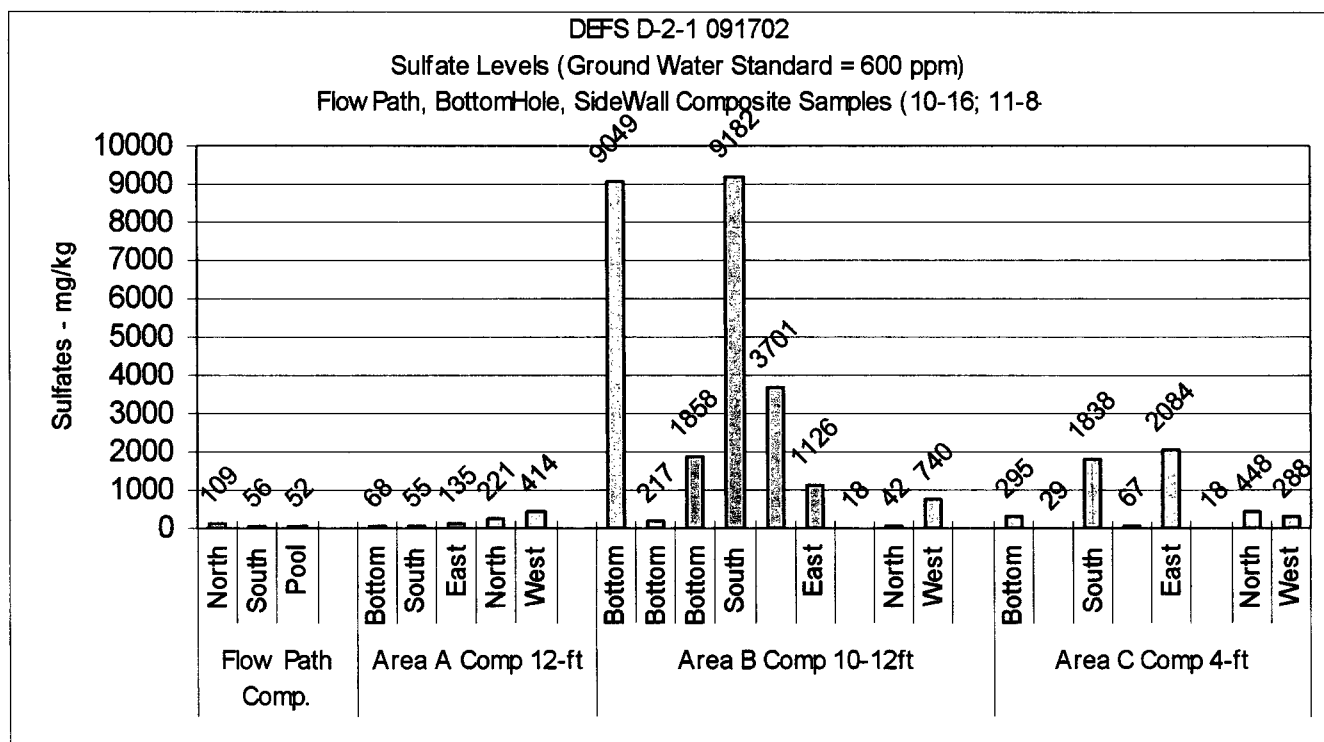
Summary Table - Analytical Data

Duke Energy Field Services

Bar Charts: Composite TPH, Chloride and Sulfate Analyses







Lab Analyses Reports and Chain-of-Custody Forms



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: PAT McCASLAND

P.O. BOX 1558

EUNICE, NM 88231

FAX TO: (505) 394-2601

Receiving Date: 09/24/02
Reporting Date: 09/27/02
Project Number: NOT GIVEN
Project Name: D-2-1
Project Location: NOT GIVEN

Sampling Date: 09/24/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: AH

TCLP METALS

LAB NO.	SAMPLE ID	As ppm	Ag ppm	Ba ppm	Cd ppm	Cr ppm	Pb ppm	Hg ppm	Se ppm
---------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------	-----------

ANALYSIS DATE:	09/27/02	09/27/02	09/27/02	09/27/02	09/27/02	09/27/02	09/27/02	09/27/02	09/27/02
EPA LIMITS:	5	5	100	1	5	5	0.2	1	
H7064-1 SDD2192402-SPHAZ	<1	<1	<5	<0.1	<1	<1	<0.02	<0.1	
Quality Control	0.047	5.015	21.48	1.008	4.782	5.115	0.0101	0.150	
True Value QC	0.050	5.000	25.00	1.000	5.000	5.000	0.010	0.150	
% Recovery	94.0	100	85.9	101	95.6	102	101	100	
Relative Standard Deviation	2.0	0.2	3.4	0.2	0.4	1.0	1.0	5.7	

METHODS: EPA 1311, 600/4-91/010	206.2	272.1	208.1	213.1	218.1	239.1	245.1	270.2	
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Chemist

Date

H7064m

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ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.

ATTN: PAT McCASLAND

P.O. BOX 1558

EUNICE, NM 88231

FAX TO: (505) 394-2601

Receiving Date: 09/24/02

Reporting Date: 09/27/02

Project Number: NOT GIVEN

Project Name: D-2-1

Project Location: NOT GIVEN

Analysis Date: 09/25/02

Sampling Date: 09/24/02

Sample Type: SOIL

Sample Condition: COOL & INTACT

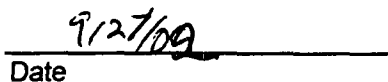
Sample Received By: BC

Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl ⁻ (mg/Kg)
H7064-1	SDD2192402SPHAZ	544
Quality Control		1000
True Value QC		1000
% Recovery		100
Relative Percent Difference		8.0

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


Chemist


Date



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**ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.**

ATTN: PAT McCASLAND

P.O. BOX 1558

EUNICE, NM 88231

FAX TO: (505) 394-2601

Receiving Date: 09/24/02

Reporting Date: 09/26/02

Project Number: NOT GIVEN

Project Name: D-2-1

Project Location: NOT GIVEN

Sampling Date: 09/24/02

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: BC

Analyzed By: AH/BC

REACTIVITY

LAB NO.	SAMPLE ID	Sulfide (ppm)	Cyanide (ppm)	CORROSIVITY (pH)	IGNITABILITY (°F)
ANALYSIS DATE:		09/25/02	09/25/02	09/24/02	09/24/02
H7064-1	SDD2192402-SPHAZ	Not reactive	Not reactive	7.01	Nonflammable
Quality Control		NR	NR	7.00	NR
True Value QC		NR	NR	7.00	NR
% Recovery		NR	NR	100	NR
Relative Percent Difference		NR	NR	0.3	NR

METHOD: EPA SW-846 7.3, 7.2, 1030 (proposed), 1311, 40 CFR 261

Chemist

Date



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

Receiving Date: 09/24/02
Reporting Date: 09/27/02
Project Number: NOT GIVEN
Project Name: D-2-1
Project Location: NOT GIVEN
Lab Number: H7064-1
Sample ID: SDD2192402-SPHAZ


Analysis Date: 09/27/02
Sampling Date: 09/24/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

TCLP SEMIVOLATILES (ppm)	EPA LIMIT	Sample Result H7064-1	Method Blank	QC	% Recov.	True Value QC
Pyridine	5.00	<0.020	<0.005	0.031	62	0.050
1,4-Dichlorobenzene	7.50	<0.020	<0.005	0.028	56	0.050
o-Cresol	200	<0.020	<0.005	0.039	78	0.050
m, p-Cresol	200	<0.020	<0.005	0.041	82	0.050
Hexachloroethane	3.00	<0.020	<0.005	0.027	54	0.050
Nitrobenzene	2.00	<0.020	<0.005	0.047	94	0.050
Hexachloro-1,3-butadiene	0.500	<0.020	<0.005	0.033	66	0.050
2,4,6-Trichlorophenol	2.00	<0.020	<0.005	0.047	94	0.050
2,4,5-Trichlorophenol	400	<0.020	<0.005	0.043	86	0.050
2,4-Dinitrotoluene	0.130	<0.020	<0.005	0.044	88	0.050
Hexachlorobenzene	0.130	<0.020	<0.005	0.047	94	0.050
Pentachlorophenol	100	<0.020	<0.005	0.044	88	0.050

% RECOVERY

Fluorophenol	60
Phenol-d5	51
Nitrobenzene-d5	70
2-Fluorobiphenyl	69
2,4,6-Tribromophenol	108
Terphenyl-d14	58

METHODS: EPA SW-846 1311, 8270, 3510


Burgess J.A. Cooke, Ph. D.


Date



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

Receiving Date: 09/24/02
Reporting Date: 09/26/02
Project Number: NOT GIVEN
Project Name: D-2-1
Project Location: NOT GIVEN
Lab Number: H7064-1
Sample ID: SDD2192402-SPHAZ

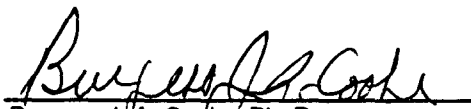
Analysis Date: 09/25/02
Sampling Date: 09/24/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: BC
Analyzed By: BC

TCLP VOLATILES (ppm)	EPA LIMIT	Sample Result H7064-1	Method Blank	QC	%Recov.	True Value QC
Vinyl Chloride	0.20	<0.005	<0.005	0.100	100	0.100
1,1-Dichloroethylene	0.7	<0.005	<0.005	0.081	81	0.100
Methyl Ethyl Ketone	200	<0.050	<0.050	0.113	113	0.100
Chloroform	6.0	0.008	<0.005	0.091	91	0.100
1,2-Dichloroethane	0.5	<0.005	<0.005	0.107	107	0.100
Benzene	0.5	<0.005	<0.005	0.100	100	0.100
Carbon Tetrachloride	0.5	<0.005	<0.005	0.113	113	0.100
Trichloroethylene	0.5	<0.005	<0.005	0.097	97	0.100
Tetrachloroethylene	0.7	<0.005	<0.005	0.094	94	0.100
Chlorobenzene	100	<0.005	<0.005	0.090	90	0.100
1,4-Dichlorobenzene	7.5	<0.005	<0.005	0.100	100	0.100

% RECOVERY

Dibromofluoromethane	96
Toluene-d8	116
Bromofluorobenzene	117

METHODS: EPA SW 846-8260, 1311


Burgess J.A. Cooke, Ph. D.

9/26/02

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 Duke Energy				Bill To				Analysis Request																						
Project Manager Paul Mulkey								<div style="display: flex; flex-direction: column; align-items: center;"> <div>BTEX 8021B</div> <div>TPH 8015M</div> <div>CI</div> <div>REACTIVITY</div> <div>Ignitability</div> <div>Corrosivity</div> <div>TCLP</div> </div>																						
Address																														
City, State, Zip																														
Phone#/Fax# 910-4704																														
Project #/Owner																														
Project Name D-2-1																														
Project Location																														
Sampler Name John Good																														
LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M	CI	REACTIVITY	Ignitability	Corrosivity	TCLP									
				GROUND WATER	WASTEWATER	SOIL	CUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME																
17064	SDD2192402-SPHAZ	G	1			X								9/24/02	9:30			X	X	X	X	X								

Sampler Relinquished: <i>John Good</i>		Date: <i>9/24/02</i>	Received By:	Fax Results To Pat McCasland 505-394-2601 REMARKS:
		Time: <i>11:00</i>		
Relinquished by:		Date:	Received By: (lab staff)	
		Time:	<i>Burgett</i>	
Delivered by Sampler		Sample Cool & Intact Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Checked By:



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ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.

ATTN: JOHN GOOD

P.O. BOX 1558

EUNICE, NM 88231

FAX TO: (505) 394-2601

Receiving Date: 10/16/02

Reporting Date: 10/18/02

Project Owner: DUKE ENERGY FIELD SERVICES

Project Name: D-2-1 091702

Project Location: UL-P SECTION 11 T18S R38E

Sampling Date: 10/16/02

Sample Type: SOIL

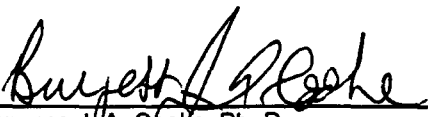
Sample Condition: COOL & INTACT

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:		10/16/02	10/16/02	10/16/02	10/16/02	10/16/02	10/16/02
H7135-1	DD21A101602BHC	<10.0	27.4	<0.005	<0.005	<0.005	<0.015
H7135-2	DD21A101602SSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-3	DD21A101602ESWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-4	DD21A101602NSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-5	DD21A101602WSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-6	DD21B101602BHC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-7	DD21B101602SSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-8	DD21B101602ESWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-9	DD21B101602NSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-10	DD21B101602WSWC	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
H7135-11	DD21C101602BHC	<10.0	23.7	<0.005	<0.005	<0.005	<0.015
H7135-12	DD21C101602SSWC	<10.0	664	<0.005	<0.005	<0.005	<0.015
H7135-13	DD21C101602ESWC	<10.0	1340	<0.005	<0.005	<0.005	<0.015
H7135-14	DD21C101602NSWC	<10.0	193	<0.005	<0.005	<0.005	<0.015
H7135-15	DD21C101602WSWC	<10.0	409	<0.005	<0.005	<0.005	<0.015
Quality Control		939	1020	0.098	0.102	0.107	0.308
True Value QC		1000	1000	0.100	0.100	0.100	0.300
% Recovery		93.9	102	98.3	102	107	103
Relative Percent Difference		1.3	<0.1	8.1	5.1	5.5	4.5

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


Burgess J.A. Cooke, Ph. D.

10/18/02
Date

H7135BT.XLS

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

Receiving Date: 10/16/02
Reporting Date: 10/17/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: D-2-1 091702
Project Location: UL-P SECTION 11 T18S R38E

Sampling Date: 10/16/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

		Cl ⁻	SO ₄	pH
		(mg/Kg)	(mg/Kg)	(s.u.)
LAB NUMBER	SAMPLE ID	10/17/02	10/17/02	10/17/02
ANALYSIS DATE				
H7135-1	DD21A101602BHC	416	68	7.29
H7135-2	DD21A101602SSWC	64	55	7.79
H7135-3	DD21A101602ESWC	176	135	7.69
H7135-4	DD21A101602NSWC	96	221	7.80
H7135-5	DD21A101602WSWC	128	414	7.98
H7135-6	DD21B101602BHC	752	9049	7.85
H7135-7	DD21B101602SSWC	928	9182	7.81
H7135-8	DD21B101602ESWC	928	1126	7.95
H7135-9	DD21B101602NSWC	400	42	8.03
H7135-10	DD21B101602WSWC	672	740	8.00
H7135-11	DD21C101602BHC	48	295	8.00
H7135-12	DD21C101602SSWC	64	1838	7.87
H7135-13	DD21C101602ESWC	80	2084	7.82
H7135-14	DD21C101602NSWC	64	448	7.97
H7135-15	DD21C101602WSWC	64	288	7.90
H7135-16	DD21101602BG	80	308	8.43
Quality Control		970	49.87	6.94
True Value QC		1000	50.00	7.00
% Recovery		97.0	99.7	99.1
Relative Percent Difference		8.0	1.3	0.3

METHODS: 600/4-79-020

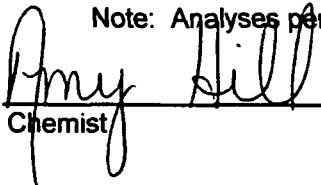
4500-Cl⁻B*

375.4

150.1

*Standard Methods

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


Chemist


10-17-02
Date




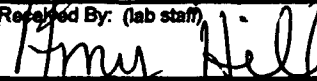
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Cardinal Laboratories Inc.

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.										Bill To				ANALYSIS REQUEST																		
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 D-2-1 091702																																
Project Location UL-P Section 11 T18S R38E																																
Sampler Name Morris Burkett																																
LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX						PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄ ²⁻)	pH													
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME																		
H-7135-1	DD21A101002BHC	C	1			X					X		10/16/02	10:15	X	X	X	X	X													
-2	DD21A101002SSWC	C	1			X					X		10/16/02	10:20	X	X	X	X	X													
-3	DD21A101002ESWC	C	1			X					X		10/16/02	10:25	X	X	X	X	X													
-4	DD21A101002NSWC	C	1			X					X		10/16/02	10:30	X	X	X	X	X													
-5	DD21A101002WSWC	C	1			X					X		10/16/02	10:35	X	X	X	X	X													
-6	DD21B101002BHC	C	1			X					X		10/16/02	10:40	X	X	X	X	X													
-7	DD21B101002SSWC	C	1			X					X		10/16/02	10:45	X	X	X	X	X													
-8	DD21B101002ESWC	C	1			X					X		10/16/02	10:50	X	X	X	X	X													
-9	DD21B101002NSWC	C	1			X					X		10/16/02	10:55	X	X	X	X	X													
-10	DD21B101002WSWC	C	1			X					X		10/16/02	11:00	X	X	X	X	X													

Sampler Relinquished:		Date 10-16-02	Received By:	Fax Results To John Good 505-394-2601 REMARKS:
		Time 11:30		
Relinquished by:		Date 10-16-02	Received By: (lab staff)	
		Time 7:00		
Delivered by John Good, EPI		Sample Cool & Intact Yes No		Checked By:

2111 Beechwood, Abilene, TX 79603
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101 East Marland, Hobbs, NM 88240
505-393-2326 Fax 505-393-2476

Company Name		Environmental Plus, Inc.		Bill To						ANALYSIS REQUEST																			
Project Manager		John Good		<div style="text-align: center;">  EPI </div>																									
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		D-2-1 091702																											
Project Location		UL-P Section 11 T18S R38E																											
Sampler Name		Morris Burkett																											
LAB I.D.	SAMPLE I.D.	(GRAB OR C)OMP.	# CONTAINERS	MATRIX						PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M	CHLORIDES (Cl)	SULFATES (SO ₄)	PH										
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE	TIME															
H 7135-11	DD21C101002BHC	C	1			X					X		10/16/02	11:05	X	X	X	X	X										
-12	DD21C101002SSWC	C	1			X					X		10/16/02	11:10	X	X	X	X	X										
-13	DD21C101002ESWC	C	1			X					X		10/16/02	11:15	X	X	X	X	X										
-14	DD21C101002NSWC	C	1			X					X		10/16/02	11:20	X	X	X	X	X										
-15	DD21C101002WSWC	C	1			X					X		10/16/02	11:25	X	X	X	X	X										
-16	DDZ1101602BB	G	1			X					X		10/16/02	11:30			X	X	X										

Sampler Relinquished: <i>Morris Burkett</i>		Date: 10/16/02 Time: 11:30	Received By: <i>John Good</i>	Fax Results To John Good 505-394-2601 REMARKS:
Relinquished by: <i>John Good</i>		Date: 10/16/02 Time: 1:00	Received By: (lab staff) <i>Irmy Hill</i>	
Delivered by John Good, EPI		Sample Cool & Intact Yes No		



ARDINAL 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: 10/17/02

Reporting Date: 10/18/02

Project Owner: DUKE ENERGY FIELD SERVICES

Project Name: D-2-1 091702

Project Location: UL-P SECTION 11 T18S R38E

Sampling Date: 10/17/02

Sample Type: SOIL

Sample Condition: COOL & INTACT

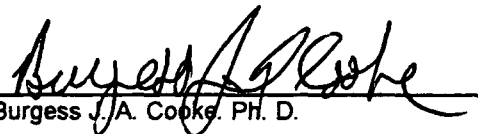
Sample Received By: AH

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:	10/17/02	10/17/02	10/17/02	10/17/02	10/17/02	10/17/02	10/17/02
H7138-1 DD21101702FPN	<10.0	153	<0.005	<0.005	<0.005	<0.005	<0.015
H7138-2 DD21101702FPS	<10.0	12.1	<0.005	<0.005	<0.005	<0.005	<0.015
H7138-3 DD21101702POOL	<10.0	<10.0	<0.005	<0.005	<0.005	<0.005	<0.015
Quality Control	780	797	0.092	0.101	0.110	0.318	
True Value QC	800	800	0.100	0.100	0.100	0.300	
% Recovery	97.6	99.8	91.5	101	110	106	
Relative Percent Difference	3.3	7.7	7.4	0.7	2.9	3.1	

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


Burgess J. A. Cooke, Ph. D.

10/18/02
Date

H7138BT.XLS

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**ANALYTICAL RESULTS FOR
ENVIRONMENTAL PLUS, INC.**

ATTN: JOHN GOOD

P.O. BOX 1558

EUNICE, NM 88231

FAX TO: (505) 394-2601

Receiving Date: 10/17/02

Reporting Date: 10/18/02

Project Owner: DUKE ENERGY FIELD SERVICES

Project Name: D-2-1 091702

Project Location: UL-P SECTION 11 T18S R38E

Sampling Date: 10/17/02

Sample Type: SOIL

Sample Condition: COOL & INTACT

Sample Received By: AH

Analyzed By: AH

		Cl ⁻	SO ₄	pH
		(mg/Kg)	(mg/Kg)	(s.u.)
LAB NUMBER	SAMPLE ID			
ANALYSIS DATE		10/17/02	10/18/02	10/17/02
H7138-1	DD21101702FPN	144	109	8.29
H7138-2	DD21101702FPS	256	56	7.86
H7138-3	DD21101702POOL	144	52	8.74
Quality Control		970	49.87	6.94
True Value QC		1000	50.00	7.00
% Recovery		97.0	99.7	99.1
Relative Percent Difference		8.0	1.3	0.3

METHODS: 600/4-79-020

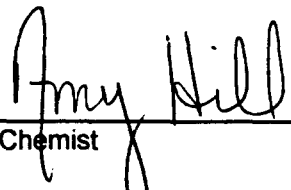
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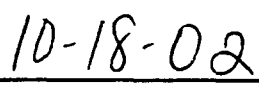
375.4

150.1

***Standard Methods**

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


Chemist


Date

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[illegible]



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

Receiving Date: 11/08/02
Reporting Date: 11/13/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: D-2-1 091702
Project Location: UL-P SECTION 11 T18S R38E

Analysis Date: 11/11/02
Sampling Date: 11/07/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	SO ₄ (mg/Kg)
H7195-2	SDD21110802BBHC-12	1858
H7195-3	SDD21110802BSSWC	3701
H7195-5	SDD21110802BESWC	1572
H7195-7	SDD21110802CBHC-4	29.1
H7195-8	SDD21110802CSSWC	67.2
H7195-10	SDD21110802CESWC	17.9
Quality Control		49.87
True Value QC		50.00
% Recovery		99.7
Relative Percent Difference		1.3

METHOD: 600/4-79-020	375.4
----------------------	-------

Amy Hill
Chemist

11-13-02
Date

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

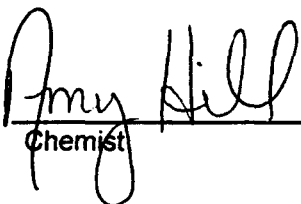
Receiving Date: 11/08/02
Reporting Date: 11/13/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: D-2-1 091702
Project Location: UL-P SECTION 11 T18S R38E

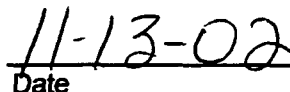
Analysis Date: 11/11/02
Sampling Date: 11/07/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl ⁻ (mg/Kg)
H7195-1	SDD21110802ABHC-13	144
H7195-2	SDD21110802BBHC-12	144
H7195-3	SDD21110802BSSWC	320
H7195-4	SDD21110802BNSWC	320
H7195-5	SDD21110802BESWC	32
H7195-6	SDD21110802BWSWC	128
H7195-7	SDD21110802CBHC-4	48
Quality Control		990
True Value QC		1000
% Recovery		99.0
Relative Percent Difference		1.0

METHOD: Standard Methods

4500-ClB


Chemist


Date

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H71954



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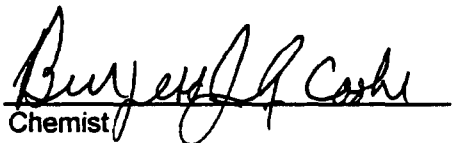
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ENVIRONMENTAL PLUS, INC.
ATTN: JOHN GOOD
P.O. BOX 1558
EUNICE, NM 88231
FAX TO: (505) 394-2601

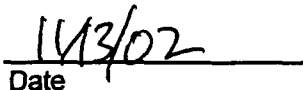
Receiving Date: 11/08/02
Reporting Date: 11/13/02
Project Owner: DUKE ENERGY FIELD SERVICES
Project Name: D-2-1 091702
Project Location: UL-P SECTION 11 T18S R38E

Sampling Date: 11/07/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO	DRO
		(C ₆ -C ₁₀) (mg/Kg)	(>C ₁₀ -C ₂₈) (mg/Kg)
ANALYSIS DATE:		11/11/02	11/11/02
H7195-7	SDD21110802CBHC-4	<10.0	<10.0
H7195-8	SDD21110802CSSWC	<10.0	<10.0
H7195-9	SDD21110802CNSWC	<10.0	<10.0
H7195-10	SDD21110802CESWC	<10.0	<10.0
H7195-11	SDD21110802CWSWC	<10.0	<10.0
Quality Control		795	782
True Value QC		800	800
% Recovery		98.4	97.8
Relative Percent Difference		8.2	0.8

METHOD: SW-846 8015 M


Chemist



Date

H7195t

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505-393-2326 Fax 505-393-2476

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

Company Name		Environmental Plus, Inc.		Bill To										ANALYSIS REQUEST																					
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		D-2-1 091702																																	
Project Location		UL-P Section 11 T18S R38E																																	
Sampler Name		John Good																																	
LAB I.D.	SAMPLE I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX					PRESERV.			SAMPLING		BTEX 8021B	TPH 8015M	CHLORIDES (CT)	SULFATES (SO ₄)	PH																	
				GROUND WATER	WASTEWATER	SOIL	CRUDE OIL	SLUDGE	OTHER:	ACID/BASE	ICE/COOL	OTHER	DATE																TIME						
17195-1	SDD21110802ABHC-13	C	1			X					X		7-Nov	13:00			X																		
2	SDD21110802BBHC-12	C	1			X					X		7-Nov	13:05			X	X																	
3	SDD21110802BSSWC	C	1			X					X		7-Nov	13:10			X	X																	
4	SDD21110802BNSWC	C	1			X					X		7-Nov	13:15			X																		
5	SDD21110802BESWC	C	1			X					X		7-Nov	13:20			X	X																	
6	SDD21110802BWSWC	C	1			X					X		7-Nov	13:25			X																		
7	SDD21110802CBHC-4	C	1			X					X		7-Nov	13:30		X	X	X																	
8	SDD21110802CSSWC	C	1			X					X		7-Nov	13:35		X		X																	
9	SDD21110802CNSWC	C	1			X					X		7-Nov	13:40		X																			
10	SDD21110802CESWC	C	1			X					X		7-Nov	13:45		X		X																	
11	SDD21110802CWSWC	C	1			X					X		7-Nov	13:50		X																			

Sampler Relinquished: *John Good* Date: 7-18-02 Time: 16:30

Relinquished by: _____ Date: 7-18-02 Time: 7:20

Delivered by: _____

Received By: _____

Received By: (lab staff) *Mix Hill*

Checked By: _____

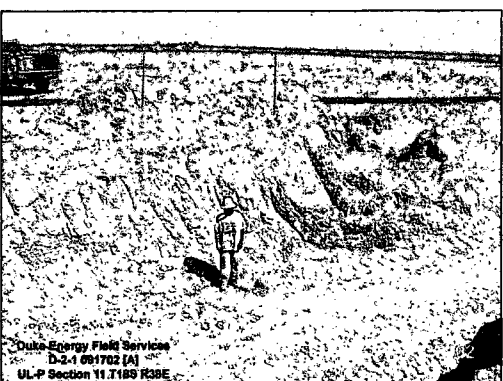
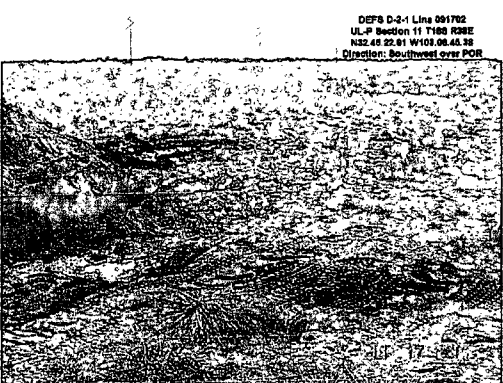
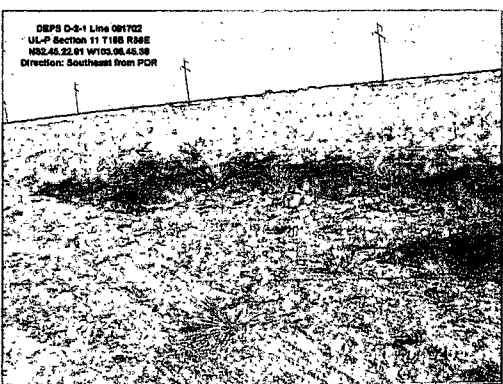
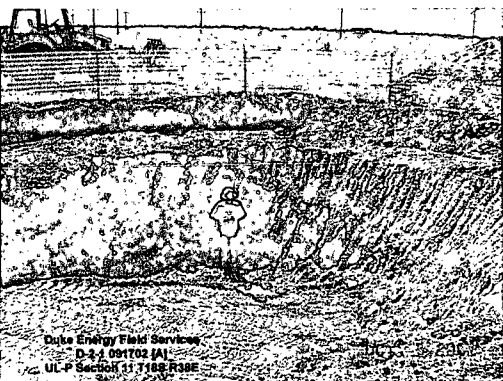
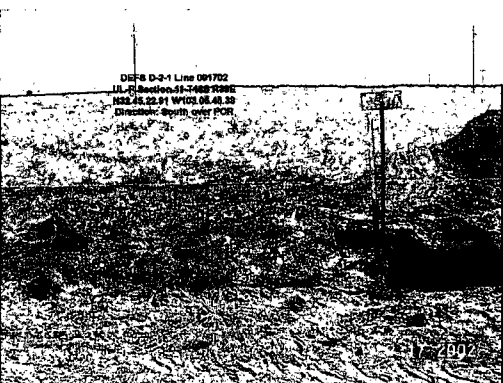
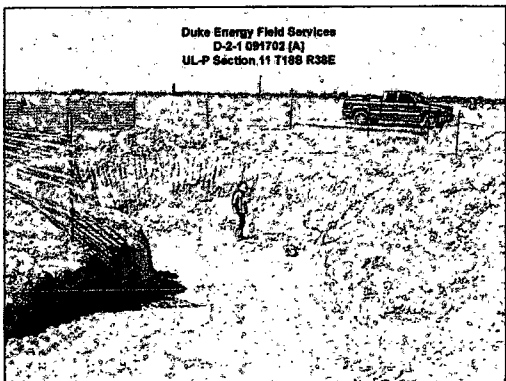
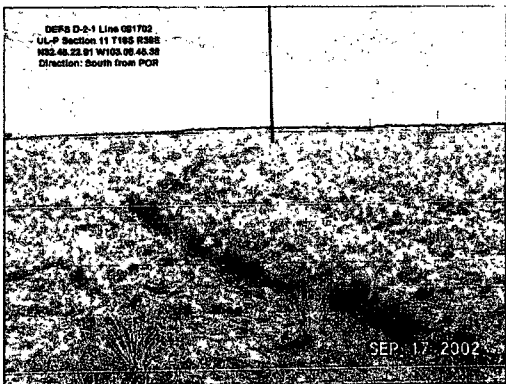
Sample Cool & Intact: Yes ☒ No ☐

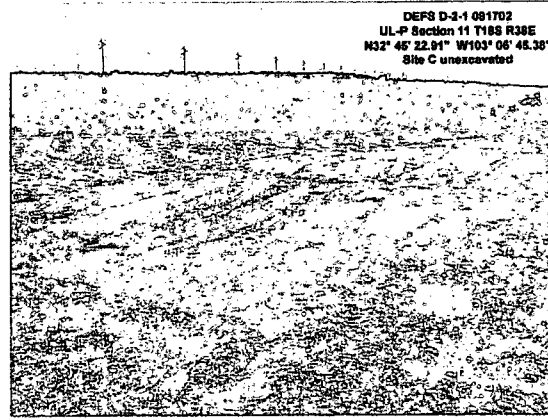
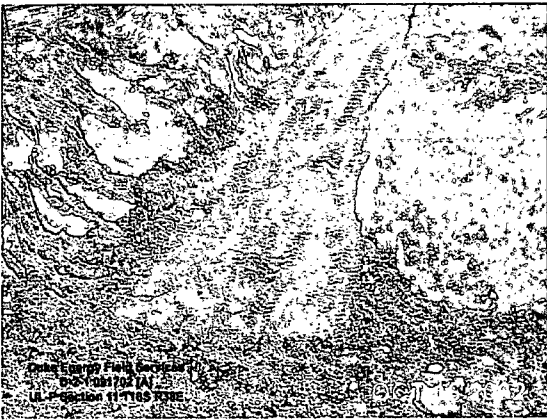
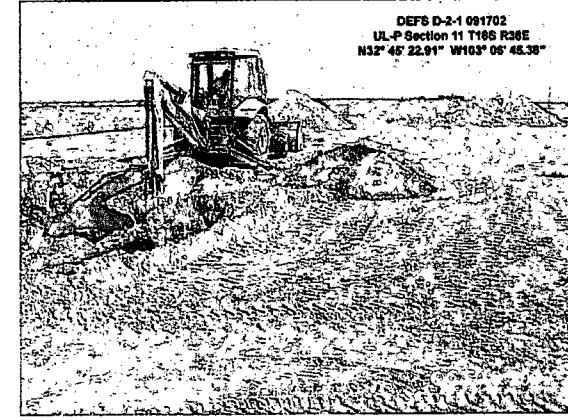
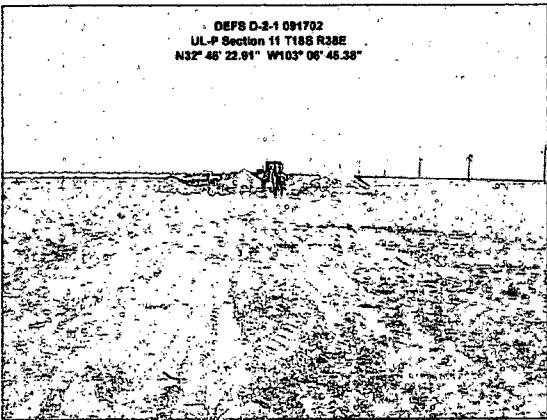
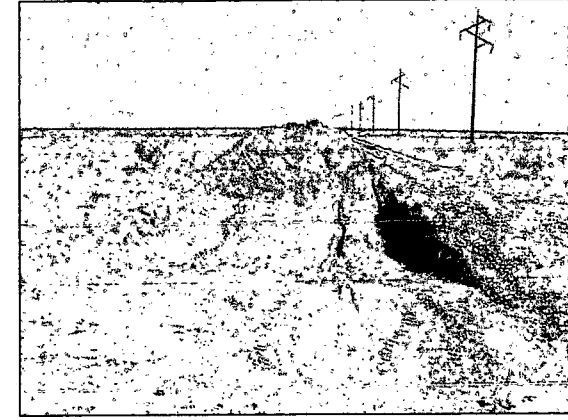
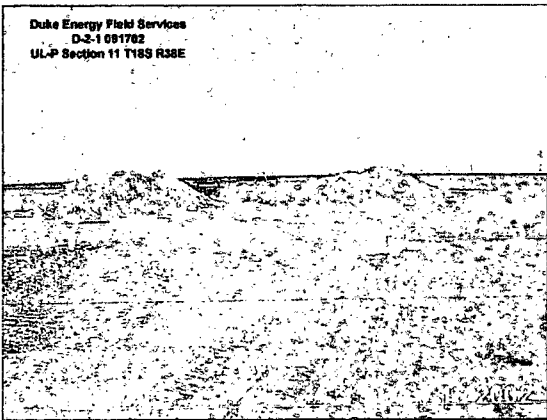
Fax Results To John Good 505-394-2601

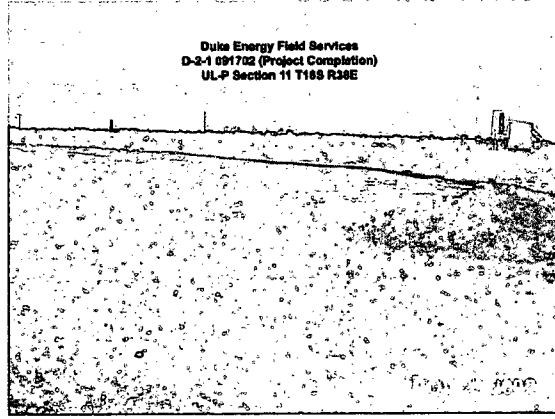
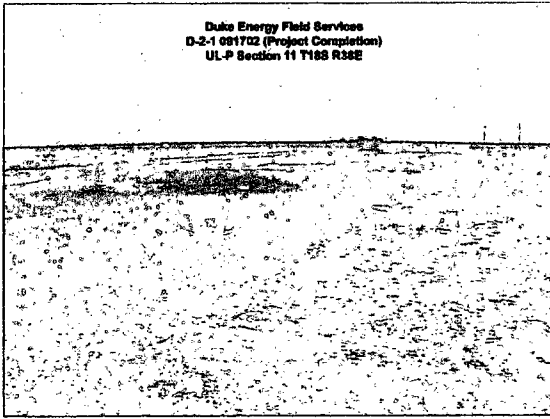
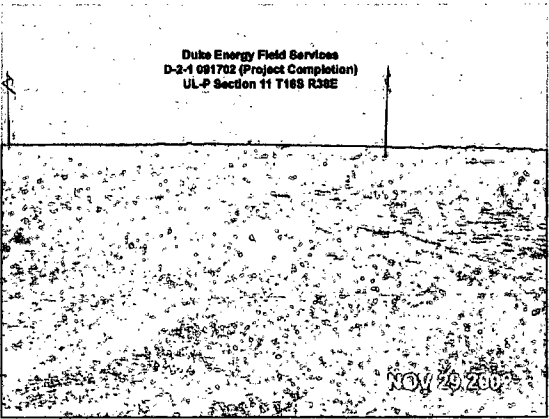
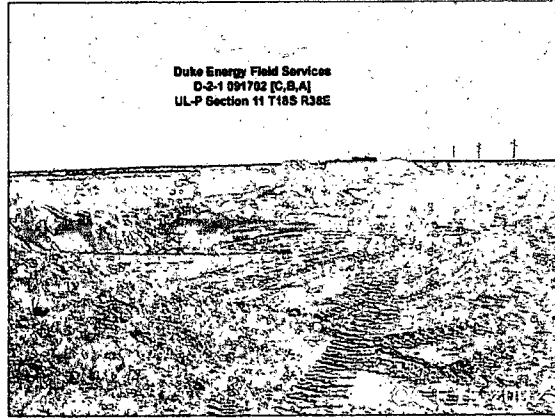
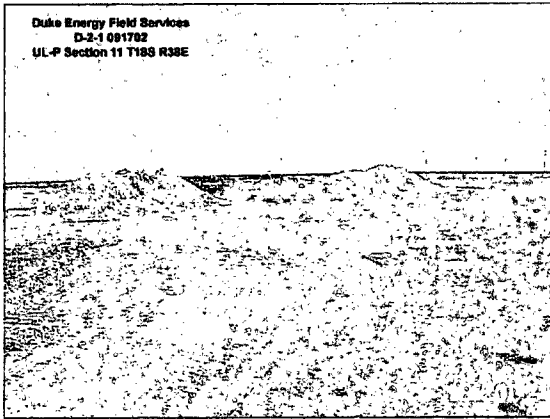
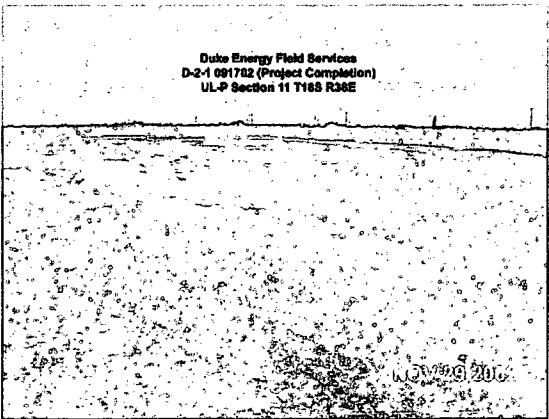
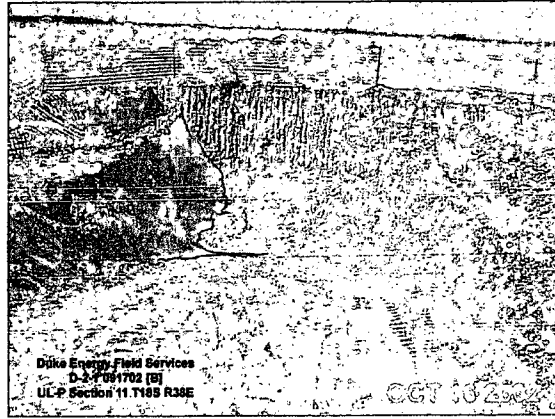
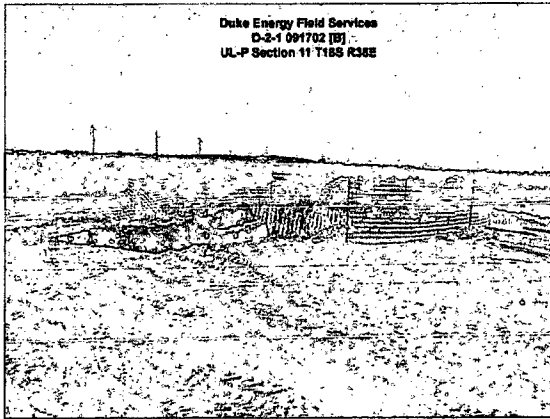
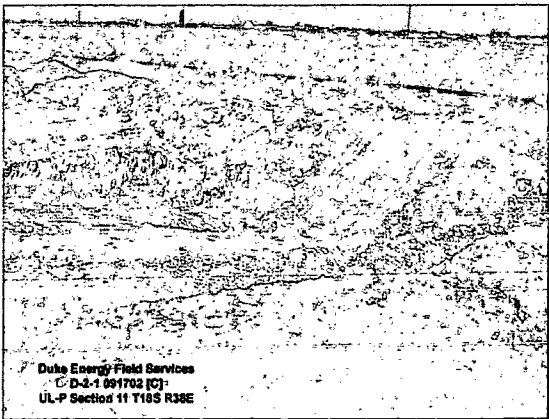
REMARKS:

Site Photographs

Duke Energy Field Services







Final C-141 Form**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 Duke Energy Field Services	Contact Paul Mulkey
Address 11525 West Carlsbad Hwy, Hobbs, NM 88240	Telephone No. 505-397-5716
Facility Name D-2-1 Line	Facility Type Natural Gas Pipeline

Surface Owner VMJ, Inc. (Vernon M. Jones)	Mineral Owner NA	Lease No. NA
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LOCATION OF RELEASE

Unit Letter P	Section 11	Township 18S	Range 38E	Feet from South Line 550	Feet from West Line 4612	Longitude W103:06:45.38	Latitude N32:45:22.91	County: Lea
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NATURE OF RELEASE

Type of Release Natural Gas and associated liquid components	Volume of Release >15 bbl	Volume Recovered 0 bbl
Source of Release Steel Natural Gas Pipeline	Date and Hour of Occurrence Unknown	Date and Hour of Discovery 09/17/02 AM
Was Immediate Notice Given? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? NA	
By Whom? NA	Date and Hour NA	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. NA	
If a Watercourse was Impacted, Describe Fully.* NA		
Describe Cause of Problem and Remedial Action Taken.* Internal pipeline corrosion, pipe section removed, looped, eventual replacement planned.		
Describe Area Affected and Cleanup Action Taken.* ~9600-ft² surface area affected (3 releases + flowpath). Remediation documentation attached.		

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

Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Paul Mulkey	Approved by District Supervisor:	
Title: Construction & Maintenance Supervisor	Approval Date:	Expiration Date:
Date: 12/3/02 Phone: 505-397-5716	Conditions of Approval:	<input type="checkbox"/> Attached

Attach Additional Sheets If Necessary

		Incident Date and NMOCD Notified?	
		09/17/02 AM	NA
SITE:	D-2-1 Line	Assigned Site Reference #:	DEFS D-2-1 091702
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):	>15	Recovered (bbls):	0
>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:	DEFS D-2-1 091702		
Source of contamination:	Steel Natural Gas Pipeline		
Land Owner, i.e., BLM, ST, Fee, Other:	VMJ, Inc. (Vernon M.)		
LSP Dimensions:	(see Figure 3 attached)		
LSP Area:	9600 ft ²		
Location of Reference Point (RP):			
Location distance and direction from RP:			
Latitude:	N32:45:22.91		
Longitude:	W103:06:45.38		
Elevation above mean sea level:	3628 -ft amsl		
Feet from South Section Line:	550		
Feet from West Section Line:	4612		
Location - Unit or 1/4 1/4:	UL- P	SE 1/4 of	SE 1/4
Location - Section:	11		
Location - Township:	18S		
Location - Range:	38E		
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):	65		
Depth (ft) of contamination (DC):	14		
Depth (ft) to ground water (DG - DC = DtGW):	51		
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: 10	Wellhead Protection Area Score: 0	Surface Water Score: 0	
Site Rank (1+2+3) = 10			
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

¹100 ppm field VOC headspace measurement may be substituted for lab analysis

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State of New Mexico
Energy Minerals and Natural Resources
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-138
Revised March 17, 1999

Submit Original
Plus 1 Copy
to Appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt <input checked="" type="checkbox"/> Non-Exempt <input type="checkbox"/> Verbal Approval Received: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	6. Generator Duke Energy Field Services
2. Management Facility Destination Environmental Plus, Inc. Landfarm #NM-01-0013	5. Originating Site D-2-1 Line (091702)
3. Address of Facility Operator 2100 Avenue O, P.O. Box 1558, Eunice, New Mexico 88231	6. Transporter Environmental Plus, Inc.
7. Location of Material (Street Address or ULSTR) UL-P Section 11 T18S R38E	8. State New Mexico
9. <u>Circle One</u> : A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved. All transporters must certify the wastes delivered are only those consigned for transport.	

BRIEF DESCRIPTION OF MATERIAL:

Contaminated Soil – Natural Gas Line leak

Estimated Volume 500 yd³ Known Volume (to be entered by the operator at the end of the haul) 1900 yd³

SIGNATURE
24, 2002

John Good
Waste Management Facility Authorized Agent

TITLE: EPI Environmental Consultant

DATE: Sept

TYPE OR PRINT NAME: John Good

TELEPHONE NO. 505-394-3481

(This space for State Use)

APPROVED BY: _____ TITLE: _____ DATE: _____


APPROVED BY: _____ TITLE: _____ DATE: _____

ENVIRONMENTAL PLUS, INC.**Environmental Services & Land Farm**

PERMIT # NM-01-0013

CERTIFICATE OF WASTE STATUS**"RCRA EXEMPT WASTE"**COMPANY: DUKE ENERGY FIELD SERVICESORIGIN: UL OR ¼¼: P SECTION: 11 TOWNSHIP: 18S RANGE: 38ESOURCE DESCRIPTION (PIPELINE, LEASE, BATTERY, FLOWLINE, ETC.) PIPELINE8" D-2-1 NATURAL GAS PIPELINE

"AS A CONDITION OF ACCEPTANCE FOR DISPOSAL,
 I HEREBY CERTIFY THAT THIS WASTE IS AN **EXEMPT** WASTE
 AS DEFINED BY THE ENVIRONMENTAL PROTECTION AGENCY (EPA) JULY 1988
 REGULATORY DETERMINATION AND TO MY KNOWLEDGE, THIS WASTE HAS BEEN
 CHARACTERIZED AS "NON-HAZARDOUS" PURSUANT TO THE PROVISIONS OF EPA 40 CFR
 PART 261 SUBPART C AND HAS NOT BEEN COMINGLED WITH AN EPA 40 CFR PART 261
 SUBPART D "LISTED WASTE."

I,	PAUL MULKEY	, THE UNDERSIGNED AGENT
FOR	DUKE ENERGY FIELD SERVICES	, HEREBY CERTIFY THAT,
BASED ON PERSONAL KNOWLEDGE, THE ABOVE STATEMENT IS TRUE AND CORRECT.		
NAME	PAUL MULKEY	
TITLE	MAINTENANCE & CONSTRUCTION SUPERVISOR	
ADDRESS	11525 WEST CARLSBAD HIGHWAY	
	HOBBS, NEW MEXICO 88240	
SIGNATURE		
DATE	SEPTEMBER 24, 2002	