

1.12.05, RP 2

SITE INVESTIGATION, REMEDIATION AND FINAL C-141 CLOSURE DOCUMENTATION

J-4-2-7-4 RELEASE SITE DEFS REF: 130004

UL-M (SW¹/₄ of the SW¹/₄) of Section 8 T19S R35E ~20 Miles West -Southwest of Hobbs Lea County, New Mexico

LATITUDE: N 32° 40' 8.098" LONGITUDE: W 103° 29' 6.381"

JUNE 2005

PREPARED BY:





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NMOCD - New Mexico Oil Conservation Division EPI - Environmental Plus, Inc.

Standard of Care

Closure Report

J-4-2-7-4 Release Site

The information provided in this report was collected consistent with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993), the NMOCD Unlined Surface Impoundment Closure Guidelines (February 1993), and the Environmental Plus, Inc. (EPI) Standard Operating Procedures and Quality Assurance/Quality Control Plan. The conclusions are based on field observations and laboratory analytical reports as presented in the report. Recommendations follow NMOCD guidance and represent the professional opinions of EPI staff. These opinions were arrived at with currently accepted geologic, hydrogeologic and engineering practices at this time and location. The report was prepared or reviewed by a certified or registered EPI professional with a background in engineering, environmental, and/or the natural sciences.

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1 bluly 2005 Date

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Project Summary

Site Specific:

- Company Name: Duke Energy Field Services
- Facility Name: J-4-2-7-4 Natural Gas Gathering Pipeline
- Project Reference 130004
- Company Contacts: Mark Owens
- Site Location: WGS84 N32° 40' 8.098"; W103° 29' 6.381"
- Legal Description: Unit Letter M, (SW¼ of the SW¼), Section 8, T19S, R35E
- General Description: approximately 20-miles west-southwest of Hobbs, New Mexico
- ♦ Elevation: 3,838-ft amsl Depth to Ground Water: ≈45-ft
- Land Ownership: Snyder Ranches
- EPI Personnel: Project Consultant Iain Olness

Site Foreman – Eddie Joe Harper

Release Specific:

- Product Released: Natural Gas & NGL
- ♦ Volume Released: ≈8-bbl
 Volume Recovered: 0-bbl
- Time of Occurrence: 21-June-04 Time of Discovery: 21-June-04
- **Release Source**: 6" polyethylene NG pipeline; structural integrity compromised; repaired by clamping.
- Initial Surface Area Affected: ≈2,780-ft²

Remediation Specific:

- Final Vertical extent of contamination: 16-ft bgs; Remaining depth to ground water: <50-ft
- Water wells within 1,000-ft: 0
 Surface water bodies within 1,000-ft: 0
- NMOCD Site Ranking Index: 20 points (<50-ft to top of water table)
- Remedial thresholds for Soil: TPH 100 mg/kg; BTEX 10 mg/kg; Benzene – 50 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 above NMOCD remedial thresholds; c) blend excavated soil with surrounding clean soil and backfill the excavation.
- Disposal Facility: South Monument Landfarm
- Volume disposed of: 182-yd³
- Project Completion Date: 23 August 2004
- Additional Commentary: None

<u>1.0 Introduction & Background</u>

This report addresses the site investigation and remediation of the Duke Energy Field Services (DEFS) J-4-2-7-4 six-inch natural gas pipeline remediation site. On June 21, 2004, Environmental Plus, Inc. (EPI) was notified by DEFS regarding a recently discovered natural gas and associated natural gas liquid (NGL) release along the J-4-2-7-4 pipeline. This site is located approximately 20 miles west-southwest of Hobbs, Lea County, New Mexico (*reference Figure 1*). The initial C-141 Form submitted to the New Mexico Oil Conservation Division (NMOCD) on June 30, 2004, reports the release volume as approximately 8-barrels with none recovered. EPI performed GPS surveying, photography and characterization of the site on June 21, 2004. The initial site consisted of an approximate 2,780 square feet (ft²) 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 two 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 9.8 electron-volt (eV) lamp. In addition, 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 the excavation of approximately 1,700 cubic yards (yds³) of contaminated soil from what was ultimately a 3,600-ft² excavation, to a maximum depth of 22-feet below ground surface (bgs). Approximately 182 yds³ of contaminated soil was transported to the South Monument landfarm for treatment. The remaining contaminated soil was blended on site with clean soil purchased from Snyder Ranches and obtained from the pipeline right-of-way. The excavation bottom(s) and sidewalls were sampled on July 15-16, 2004 and analyzed in the field for the presence of organic vapors utilizing an UltraRae photoionization detector (PID) equipped with a 9.8 electron volt (eV) lamp and chlorides using LaMotte Chloride Reactant #2. Once field results indicated remedial goals had been achieved, samples were submitted for laboratory quantification of total petroleum hydrocarbons (TPH), benezenes, toluene, ethylbenzene and total xylenes (BTEX consituents), chlorides and sulfates. Analytical results indicated total petroleum hydrocarbon (TPH) concentrations in sample SDEJ427471604NSBH12 obtained from the North Side Bottomhole were above the NMOCD remedial threshold of 100 parts per million (ppm). Excavation activities resumed and another sample (SDEJ427472204NBH13) was collected from approximately one-foot below the impacted sample. Analytical results for this sample indicated all hydrocarbon concentrations were less than the NMOCD remedial thresholds. Chloride concentrations were still in excess of 250 mg/Kg. Excavation resumed until field analyses indicated that chloride concentrations were below 250 mg/Kg. On August 9, 2004, confirmatory composite samples were collected from the excavation bottom and sidewalls and submitted for laboratory analyses. Reported BTEX, TPH, Chloride and Sulfate concentrations were below remedial goals. The excavation phase of the site remediation commenced on July 14, 2004 and was completed with backfilling and contouring on August 23, 2004.

This release site is located in Unit Letter M, (SW¹/4 of the SW¹/4), Section 8, T19S, R35E, N32° 40' 8.09" and W103° 29' 6.38". The site is approximately 20-miles west-southwest of Hobbs, New Mexico. The property is owned by Snyder Ranches (*reference Figures 1 through 3*).

2.0 Site Description

2.1 Geological Description

<u>The United States Geological Survey (USGS) Ground-Water Report 6, "Geology and</u> <u>Ground-Water Conditions in Southern Lea County, New Mexico," A. Nicholson and A.</u> <u>Clebsch, 1961</u>, 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 "uniformly flat; shallow depressions and small sand dunes are the only significant relief features".

2.2 Ecological Description

The area is typical of the southwestern High Plains consisting primarily of semi-desert grasslands interspersed with Honey Mesquite (*Prosopis glandulosa*) and, annual and perennial forbs. 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 <45-ft bgs based on limited water depth data obtained from the New Mexico State Engineers Office data base. 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^{8015m}, benzene, and the mass sum of benzene, toluene, ethylbenzene, and total xylenes (BTEX), were determined based on the NMOCD Ranking Criteria as follows:

- Depth to groundwater (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 20 points with the soil remedial goals highlighted in the Site Ranking table presented below.

1. Ground V	/ater	2. Wellhead Prote	ction Area	3. Distance to Surface Water				
Depth to GW <50 points		If <1,000' from wate <200' from private do		<200 horizontal feet: <i>20 points</i>				
Depth to GW 50 10 point		source: 20 p		200-1,000 horizontal feet: 10 points				
Depth to GW > 0 points		>200' from private do	from water source, or; n private domestic water source: <i>0 points</i>					
Ground Water S	core = 20	Wellhead Protectio	n Score= 0	Surface Water Score= 0				
	···	Site Rank (1+2+3) = 20	+0+0 = 20 p	points				
Tot	al Site Ranl	king Score and Accepta	able Remedial	Goal Concentrations				
Parameter	20 (pr >	10	0				
Benzene ¹	10 p	pm	10 ppm	10 ppm				
BTEX	50 p	pm	50 ppm	50 ppm				
ТРН	100	opm	1,000 ppm 5,000 ppm					

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 ranging from 5 to 14-ft bgs on July 14 and 15, 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 9.8 eV lamp.

Upon delineating the extents of impacted soil, soil samples were collected from the blending cell, and base and sidewalls of the excavation and analyzed in the field to verify remedial limits had been achieved. Organic vapor concentrations ranged from 15.7 to 82.9 ppm with an average concentration of 50.3 ppm (*reference Table 1*). In addition, samples were collected and submitted to an independent laboratory for quantification of TPH, BTEX, chlorides and sulfates. Analytical results indicated hydrocarbon concentrations were below NMOCD remedial thresholds for all samples. Chloride concentrations ranged from 384 to 640 mg/Kg, in excess of remedial goals of 250 mg/Kg. Sulfate concentrations ranged from 489 to 691 mg/kg, two samples (SDEJ427472004NBC1-4 and NWW 15) exceeded remedial goals 650 mg/Kg. After further excavation, a grab sample from the excavation bottom and five-point composite samples from the

sidewalls and blending cells were collected and submitted for laboratory analyses. Analytical results indicated that chloride and sulfate concentrations in all samples were below remedial goals (*reference Table 1*).

5.0 Ground Water Investigation

The projected depth to ground water at this site is <50-ft bgs. Excavation of the site was to a maximum depth of 22-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 that hydrocarbon, chloride and sulfate concentrations were below NMOCD remedial thresholds (*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 July 14, 2004 and continued through August 23, 2004. Remedial activities at the site consisted of excavation of approximately 1,700 yd³ of NGL contaminated soil from the site. Approximately 182 yd³ of NGL impacted soil was transported to the South Monument landfarm for treatment. The remaining contaminated soil was blended with clean soil obtained from the right-of-way. Laboratory analysis of the blending cell five-point composite sample (BC COMP) indicated analytes were below NMOCD remedial thresholds (*reference Table 1 and Appendix 1*). After laboratory 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 August 23, 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 NGL impacted soil was excavated with a portion transported to the South Monument landfarm for treatment. The remaining NGL impacted soil was 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*.

FIGURES











TABLES

TABLE 1

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Summary of Excavation Analytical Results

J-4-2-7-4 - Ref #130004

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Sample ID	Sample Date	Sample Location	Field Analysis	Chloride Field Analysis	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO (C6-C10)	DRO (>C10-C28)	ТРН	Chloride	Sulfate
			(ppm)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
DEJ4274462204SEFP	22-Jun-04	Southeast Flow Path	33	NA	< 0.005	< 0.005	0.016	0.074	0.09	<10.0	125	125	16	51
DEJ4274462204SFP	22-Jun-04	South Flow Path	5.5	NA	< 0.005	< 0.005	< 0.005	< 0.015	< 0.030	<10.0	<10.0	<20.0	64	<1
SDEL427471404NT5	14-Jul-04	North Trench - 5'	82.9	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL427471404NT6	14-Jul-04	North Trench - 6'	361	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL427471404ST5	14-Jul-04	South Trench - 5'	173	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL427471404ST7	14-Jul-04	South Trench - 7'	81.9	NA	< 0.005	< 0.005	0.023	0.069	0.092	<10.0	46.9	46.9	192	188
SDEL42747140414ST7	14-Jul-04	South Trench - 14'	41.7	NA	< 0.005	< 0.005	< 0.005	<0.015	< 0.030	<10.0	<10.0	<20.0	32	120
SDEL427471404NT8	14-Jul-04	North Trench - 8'	114	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDELA27471404NT12	14-Jul-04	North Trench -12'	54.3	NA	< 0.005	< 0.005	< 0.005	< 0.015	< 0.030	<10.0	<10.0	<20.0	980	1,683
SDELA27471404NT7	14-Jul-04	North Trench -7'	34.8	NA	< 0.005	< 0.005	< 0.005	0.031	0.031	<10.0	<10.0	<20.0	277	1,106
SDEL427471404NET5	14-Jul-04	Northeast Trench - 5'	500	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL427471504E13	15-Jul-04	East Trench - 13'	92.4	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL42747150412E9	15-Jul-04	East Trench - 9'	655	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEL427471504SEBH10	15-Jul-04	Southeast Bottomhole - 10'	29.9	NA	<0.005	<0.005	<0.005	<0.005	<0.030	<10.0	20.5	20.5	432	977
SDEL427471504NEBH10	15-Jul-04	Northeast Bottomhole - 10'	73	NA	< 0.005	<0.005	<0.005	<0.005	<0.030	<10.0	<10.0	<20.0	560	872
SDEJ427471604NWW10	16-Jul-04	Northwest Sidewall - 10'	28.4	NA	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	640	1,879
SDEJ427471604NSBH12	16-Jul-04	North Side Bottomhole - 12'	82.9	NA	NA	NA	NA	NA	NA	<10.0	312	312	NA	NA
SDEJ427471604NEW12	16-Jul-04	Northeast Sidewall - 12'	26.2	NA	< 0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	576	637
SDEJ427471604UP10	16-Jul-04	Under Point of Release - 10'	44.5	NA	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	384	504
SDEJ472771604SSBH8	16-Jul-04	South Side Bottomhole - 8'	54.2	NA	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	448	520
SDEJ427472004NBC1-4	20-Jul-04	North Blending Cell	26.6	NA	<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	412	412	368	691
SDEJ427472004NBC2	20-Jul-04	North Blending Cell	71.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEJ427472004SBC3	20-Jul-04	South Blending Cell	58.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEJ427472004SBC4	20-Jul-04	South Blending Cell	42.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SDEJ427472204NBH13	22-Jul-04	North Bottomhole - 13'	15.7	460	<0.005	<0.005	< 0.005	<0.015	<0.030	<10.0	<10.0	<20.0	480	489
Pasture	22-Jul-04	Pasture		400	NA	NA	NA	NA	NA	NA	NA	NA	32	NA

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)

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

NA = Not Analyzed

Red, bold values are in excess of NMOCD remedial thresholds

TABLE 1

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Summary of Excavation Analytical Results

J-4-2-7-4 - Ref #130004

Sample ID	Sample Date	Sample Location	Field Analysis	Chloride Field Analysis	Benzene	Toluene	Ethylbenzene	Total Xylenes	Total BTEX	GRO (C6-C10)	DRO (>C10-C28)	ТРН	Chloride	Sulfate
			(ppm)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
NWW 15	23-Jul-04	Northwest Sidewall - 15'		600	NA	NA	NA	NA	NA	NA	NA	NA	512	691
BH 22	23-Jul-04	Bottomhole - 22'		160	NA	NA	NA	NA	NA	NA	NA	NA	192	123
NWW COMP	9-Aug-04	Northwest Sidewall Composite		160	NA	NA	NA	NA	NA	NA	NA	NA	160	143
SSBH 19'6	9-Aug-04	South Side Bottomhole - 19.5'		160	NA	NA	NA	NA	NA	NA	NA	NA	80	4.56
SWW COMP	9-Aug-04	Southwest Sidewall Composite		160	NA	NA	NA	NA	NA	NA	NA	NA	96	7.92
BC COMP	10-Aug-04	Blending Cell Composite			<0.005	<0.005	<0.005	<0.015	<0.030	<10.0	<10.0	<20.0	160	200
NMOCD Remedial	Thresholds				10				50			100	250**	650**

** Chloride and Sulfate residuals may not be capable of impacting local groundwater abover the New Mexico Water Quality Control Commission standards of 250 mg/L and 650 mg/L, respectively.

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BTEX = Benzene, Toluene, Ethylbenzene, Total Xylenes

GRO = Gasoline Range Organics

DRO = Diesel Range Organics

TPH = Total Petroleum Hydrocarbons

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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 NMOCD remedial thresholds

TABLE 2 DEFS J-4-2-7-4 Ref. # 130004

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WELL / SURFACE DATA REPORT 06/22/04

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DB	File Nbr	Use	Diversion	Owner	Well	Number	Source	Tws	Rng	Sec		re 1=NW 2=NE : ers are biggest to		UTN	A are in Me	ters	Start Date	Finish Date	Depth Well	Depth to Water
			(acre ft per annum)									a	- a	UTM Zone	Easting	Northing				
T	2359	DOM		JEWEL A. SMITH	L	2359	Shallow	19S	35E	1	1	3	4	13	648328	3617867	9/28/1953	9/28/1953	60	28
L	2339	DOM	5	JEWEL A. SWITTI	<u>L</u>	5434 S	Shallow	195	35E	1	2	1	4	13	649328	3618271	7/26/1755)/20/1/33		
Т	3945	PRO	3	RALPH LOWE	L	3945	Shallow	195	35E	1	2	2	3	13	649532	3618274	7/29/1958	7/29/1958	125	70
	5945	INO	5	KALI II LOWL	<u> </u>	3945 APPRO	Shallow	195	35E	1	2	2	3	13	649532	3618274	7/29/1958	7/29/1958	125	70
T	3945 (1)	PRO	0	T AND T INC.	<u>L</u>	3945 (1)	Shanow	195 19S	35E	1	2	2	3	13	649532	3618274	1/23/1938	112311938	125	<u>+ // </u>
I I	3945 (2)	PRO	0	T AND T INCORPORATION	L.	3945 (2)		195	35E	1	2	2	3	13	649532	3618274				+/
	5434	COM	39.8	KEY ENERGY SERVICES D/B/A PION		5434	Shallow	195 19S	35E	1	2	2	3	13	649532	3618274				+'
	5339	STK	0	CACTUS DRILLING CO.		5339	Shallow	195 19S	35E	1	2	2		13	649044	3617770	1/27/1964	2/1/1964	128	83
	9222	DOM	0	FAYE KLINE	<u> </u>	9222 (EXP)	Shanow	195	35E	2	1	1		13	646809	3618348	1/2//1904	2/1/1904	120	- 05
	5339 (7)	STK	0	SUPERIOR OIL CO.	<u>L</u> I	5344 (7) EXP		195	35E	4	1	1	3	13	644301	3617420				+ <i>!</i>
	3339(1)	31K	0	SOFERIOR OIL CO.	 	5339 EXP	1	195	35E	4	4	3		13	644409	3617119				+
T	5339 (1)	STK	0	JEWEL A. SMITH	L	5339 LAI 5339 (1) EXP		195	35E	4	4	3		13	644409	3617119				+ <i>!</i>
	5339 (1)	STK	0	EXXON OIL COMPANY	L	5340 (2) EXP		193	35E	4	4	3	1	13	644308	3617218				+ <i>!</i>
	5339 (2)	STK	0	EXXON CORP.	L	5341 (3) EXP		193	35E	4	4	3	1	13	644308	3617218	<u> </u>			+'
	5339 (3)	STK	0	EXXON CORP. EXXON CORP.	<u> </u>	5341 (3) EXP		195	35E 35E	4	4	2	1	13	644308	3617218	<u> </u>			+'
	5339 (4)	STK	0	MESA PETROLEUM	L	5342 (4) EXP 5343 (6) EXP		19S	-35E	4	4	3	1	13	644308	3617218	<u> </u>			₽ /
		PRO	0		L L	5345 (8) EXP			35E	4	4	3	1		644308	3617218				} /
	5339 (8)		0	DUAL DRILLING HONDO DRILLING	<u>L</u>			19S 19S	35E 35E	4	4	3	1	13	644308		· · · · ·			+ <i>'</i>
	5339 (9)	STK				5346 (9) EXP				4	· · · ·	3	2	+		3617218				+ <i>'</i>
	9077 (1)	STK	0	SUPERIOR OIL COMPANY	L	9077 (1) EXP		195	35E		4	3	2	13	644508	3617218				╆────┘
	9077 (2)	STK	0	MESA PETROLEUM CO.	L	9077 (2) EXP		19S	35E	4	4	3	2	13	644508	3617218				<i>'</i>
	9077 (3)	STK	0	DUAL DRILLING CO.	L	9077 (3) EXP		19S	35E	4	4	3	2	13	644508	3617218				+ <i>'</i>
	9078 (4)	STK	0	FRED POOL OPER.	L	9077 (4) EXP		19S	35E	4	4	3	2	13	644508	3617218				───′
	9079 (5)	STK	0	MCVAY DRILLING CO.	L	9077 (5) EXP		19S	35E	4	4	3	2	13	644508	3617218	ļ			∔/
	9080 (6)	PRO	0	POE PROPERTIES INC.	L	9077 (6) EXP		19S	35E	4	4	3	2	13	644508	3617218				───′
L	9081 (7)	PRO	0	SOUTHLAND ROYALTY	L	9077 (7) EXP	<u> </u>	195	35E	4	4	3	2	13	644508	3617218	0/00/1000	2/22/10/22	1.40	<u> </u>
	9103	STK	3	SUPERIOR OIL COMPANY	L	9103	Shallow	195	35E	4	4	3		13	644409	3617119	2/22/1983	2/22/1983	140	70
	9103 (1)	STK	0	SOUTHLAND ROYALITY	L	9103 (1) EXP		19S	35E	4	4	3		13	644409	3617119	· · · ·			↓ ′
L	9103 (2)	STK	0	AMOCO PRODUCTION	L	9103 (2) EXP		19S	35E	4	4	3		13	644409	3617119			4 7 0	↓ ′
L	9294	STK	3	GETTY OIL COMPANY	L	9294	Shallow	19S	35E	4	4	4	1	13	644712	3617223	8/4/1983	8/4/1983	150	↓ /
L	9294 (1)	PRO	0	GETTY OIL	L	9294 (1) EXP		19S	35E	4	4	4	1	13	644712	3617223				↓ ′
L	9294 (2)	PRO	0	ELK OIL	L	9294 (2) EXP	<u> </u>	19S	35E	4	4	4	1	13	644712	3617223	• (10) (10) (1			 /
L	9428	STK	0	ARCO OIL AND GAS COMPANY	L	9428	Shallow	19S	35E	5	1	4	3	13	642276	3617802	2/18/1984	2/18/1984	130	<u>↓</u>
	-				L	9428 EXP		19S	35E	5	1	4	3	13	642276	3617802				/
L	8869	PRO	0	JOSEPH O'NEIL	L	8869 EXP		19S	35E	5	3	2		13	642384	3617500				<u> </u>
<u> </u>	8869 (2)	PRO	0	JOSEPH O'NEIL	L	8869 (2) EXP		19S	35E	5	3	2	.	13	642384	3617500				┢────┘
	8869 (3)	PRO	0	JOSEPH O'NEIL PROP. LTD	L	8869 (3) EXP		19S	35E	5	3	2	ļ	13	642384	3617500		(110):000	0.5	<u> </u>
L	3887	DOM	3	JEWEL A. SMITH	L	3887	Shallow	195	35E	5	4	2	2	13			6/10/1958		90	55
<u>.</u>						3887 APPRO	Shallow	19S	35E	5	4	2	2	13	643290	3617607	6/10/1958	6/10/1958	90	55
	4400	DOM	3	JEWELL A. SMITH	L	4400		19S	35E	5	4	2	2	13	643290	3617607				\parallel
					L	4400 APPRO EXP		19S	35E	5	4	2	2	13	643290	3617607				↓ /
L	9347	DOM	0	JEWELL SMITH	L	9347 EXP		19S	35E	5	4	2	2	13	643290	3617607				 /
L	9347 (1)	DOM	3	FOREST OIL COMPANY	L	9347 (1)	Shallow	19S	35E	5	4	2	2	13	643290	3617607	10/3/1983	10/4/1983	94	55
L	10613	STK	3	E P CAUDILL INC	L	10613		19S	35E	5	4	2	ļ	13	643191	3617508				↓ /
L	11281	DOM	3	LONNIE R. DICKERSON	L	11281	Shallow	19S	35E	5	4	2	4	13	643290	3617407	12/18/2001		102	
L	5178	DOM	0	DALMONT RANCH JOINT VENTURE	L	5178	Shallow	19S	35E	5				13	642590	3617695	6/17/1963		142	85
L	4211	DOM	3	GENE DALMONT	L	4211	Shallow	19S	35E	6	3	1	ļ	13	640375	3617481	7/25/1959		130	60
					L	4211 APPRO	Shallow	195	35E	6	3	1		13	640375	3617481	7/25/1959	7/26/1959	130	60
L	5220(1)	PRO	0	TXO PRODUCING CORP.	L	5220 (1) EXP		19S	35E	6	4	1		13	641172	3617488				
L	5220	PRO	0	DALMONT RANCH JOINT VENTURE	L	5220	Shallow	19S	35E	6				13	640983	3617681	8/1/1963	8/1/1963	100	55
L	3145	PRO	3	PETE LOMAX DRILLING CO.	L	3145	Shallow	19S	35E	7	1	1		13	640385	3616674	3/12/1956	3/12/1956	97	45

,

APPENDIX I

LABORATORY ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY FORMS



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

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

Receiving Date: 07/01/04 Reporting Date: 07/06/04 Project Number: 130004 Project Name: DUKE ENERGY FIELD SERVICES/J-4-2-7-4 Project Location: NOT GIVEN Sampling Date: 06/22/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: BC

	GRO	DRO			ETHYL	TOTAL
LAB NO. SAMPLE ID	(C ₆ -C ₁₀)	(>C ₁₀ -C ₂₈)	BENZENE	TOLUENE	BENZENE	XYLENES
	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
ANALYSIS DATE:	07/02/04	07/02/04	07/02/04	07/02/04	07/02/04	07/02/04
H8873-1 DEJ427462204SEFP	<10.0	125	<0.005	<0.005	0.016	0.074
H8873-2 DEJ427462204SFP	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
Quality Control	784	831	0.100	0.094	0.087	0.261
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	98.0	104	100	94.4	87.4	87.1
Relative Percent Difference	5.6	2.0	4.4	5.2	4.9	2.1

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

16/04

H8873A.XLS

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

Receiving Date: 07/01/04 Reporting Date: 07/06/04 Project Number: 130004 Project Name: DUKE ENERGY FIELD SERVICES/J-4-2-7-4 Project Location: NOT GIVEN Sampling Date: 06/22/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: HM

LAB NUMBE	R SAMPLE ID	Sulfate (mg/Kg)	CI (mg/Kg)
ANALYSIS E	DATE:	07/02/04	07/02/04
H8873-1	DEJ427462204SEFP	51.4	16
H8873-2	DEJ427462204SFP	<1	64
Quality Cont	rol	48.21	1000
True Value (2C	50.00	1000
% Recovery		96.4	100
	cent Difference	6.2	2.0
METHODS:	EPA 600/4-79-02	375.4	325.3

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

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

Receiving Date: 07/14/04 Reporting Date: 07/16/04 Project Number: 130004 Project Name: DUKE ENERGY FIELD SERVICES Project Location: L-4274 Sampling Date: 07/14/04 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 (>C₁₀-C₂8) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:	07/14/04	07/14/04	07/16/04	07/16/04	07/16/04	07/16/04
H8910-1 SDEL427471404ST7	<10.0	46.9	< 0.005	<0.005	0.023	0.069
H8910-2 SDEL42747140414ST7	<10.0	<10.0	< 0.005	<0.005	< 0.005	< 0.015
H8910-3 SDEL427471404NT12	<10.0	<10.0	< 0.005	<0.005	< 0.005	< 0.015
H8910-4 SDEL42747140416NT7	<10.0	<10.0	<0.005	<0.005	<0.005	0.031
Quality Control	787	738	0.093	0.095	0.095	0.290
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	98.4	92.2	92.8	94.9	95.0	96.7
Relative Percent Difference	6.6	3.3	1.7	3.7	8.5	9.0

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

7/16/04

Date

H8910.XLS

PLEASE NOTE: Llability 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 usof 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) 394-2601

Receiving Date: 07/14/04 Reporting Date: 07/16/04 Project Number: 130004 Project Name: DUKE ENERGY FIELD SERVICES Project Location: L-4274 Sampling Date: 07/14/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: HM

	SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE	•	07/16/04	07/16/04
H8910-1 S	SDEL427471404ST7	188	192
H8910-2 S	SDEL42747140414ST7	120	32
H8910-3 S	SDEL427471404NT12	1683	980
H8910-4 S	SDEL42747140416NT7	1106	277
Quality Control		48.21	990
True Value QC		50.00	1000
% Recovery		96.4	99.0
Relative Percent I	Difference	6.2	1.0
METHODS: EPA	600/4-79-02	375.4	SM 4500-CI B

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

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

Receiving Date: 07/16/04 Reporting Date: 07/21/04 Project Number: 130004 Project Name: J-4-2-7-4 (DUKE ENERGY FIELD SERVICES) Project Location: NOT GIVEN Sampling Date: 07/15 & 07/16/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: HM Analyzed By: BC

	GRO	DRO			ETHYL	TOTAL
LAB NO. SAMPLE ID	(C ₆ -C ₁₀)	(>C ₁₀ -C ₂₈)	BENZENE	TOLUENE	BENZENE	XYLENES
	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
	-					
ANALYSIS DATE:	07/20/04	07/20/04	07/20/04	07/20/04	07/20/04	07/20/04
H8923-1 SDEJ427471504SEBH10	<10.0	20.5	<0.005	<0.005	< 0.005	<0.015
H8923-2 SDEJ427471504NEBH10	<10.0	<10.0	< 0.005	<0.005	<0.005	<0.015
H8923-3 SDEJ427471604NSBH12	<10.0	312	*	*	*	*
H8923-4 SDEJ427471604NWW10	<10.0	<10.0	< 0.005	<0.005	<0.005	<0.015
H8923-5 SDEJ427471604UP10	<10.0	<10.0	<0.005	<0.005	< 0.005	<0.015
H8923-6 SDEJ427471604SSBH8	<10.0	<10.0	< 0.005	<0.005	< 0.005	<0.015
H8923-7 SDEJ427471604NEW12	<10.0	<10.0	<0.005	<0.005	< 0.005	<0.015
Quality Control	744	768	0.090	0.091	0.090	0.268
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	93.1	96.1	89.7	91.4	90.1	89.5
Relative Percent Difference	5.1	0.4	5.7	3.7	5.4	8.1

*BTEX analysis not performed since TPH >100 mg/Kg. METHODS: TPH GRO & DRO - EPA SW-846 8015 M; BTEX - SW-846 8260.

Date

Date

H8923A.XLS

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

> Sampling Date: 07/15-07/16/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: HM Analyzed By: HM

Receiving Date: 07/16/04 Reporting Date: 07/22/04 Project Number: 130004 Project Name: J-4-2-7-4 DEFS Project Location: NOT GIVEN

		Sulfate	CI
LAB NUMBEI	R SAMPLE ID	(mg/Kg)	(mg/Kg)
ANALYSIS D	ATE:	07/20/04	07/19/04
H8923-1	SDEJ427471504SEBH10	977	432
H8923-2	SDEJ427471504NEBH10	872	560
H8923-4	SDEJ427471604NWW10	1879	640
H8923-5	SDEJ427471604UP10	504	384
H8923-6	SDEJ427471604SSBH8	520	448
H8923-7	SDEJ427471604NEW12	637	576
Quality Contro		48.21	990
True Value Q	C	50.00	1000
% Recovery		96.4	99.0
Relative Perc	ent Difference	6.2	1.0
METHODS: E	PA 600/4-79-02	375.4	SM 4500-CI ⁻ B

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

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 serviced Charlos avent shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of usor of porfits incidental or consequential damages, including, without limitation, business interruptions, loss of usor of the applicable services berewise.

Cardinal	Laborator	ies Ind	с.																							
101 East Marland	d, Hobbs, NM 88240						21	11 B	leec	hwo	ood,	Abi	ilene	e, TX 796	03											
	- ax 505-393-2476													73-7020												
Company Name	Environm	ental Plus,	, Inc	c.			7. 7.					Bill	To			A.	10.7		AN	ALY	SIS	RE	QUI	EST		
EPI Project Man	ager lain Olnes	SS		;				_									Γ	Γ	Τ	Γ						Т
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Client Company	Duke Ener	gy Field Se	rvic	es														l	L	ļ						
Facility Name	J-4-2-7-4]			7			m			1			1	İ						
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- 2	SDEJ427471504NE	3H10	С	1			X					X		15-Jul	13:45	X	X	X	X							
-3	SDEJ427471604NS	3H12	С	1			X					X		16-Jul	12:30	X	X	X	X							
-4	SDEJ427471604NW	W10	С	1			X					X		16-Jul	10:56	X	X	X	X							
-5	SDEJ427471604UP	0	С	1			X					X		16-Jul	13:00	X	X	X	X							
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PHONE (505) 393-2326 • 101 E. MARLAND • HOBBS, NM 88240

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

Receiving Date: 07/23/04 Reporting Date: 07/27/04 Project Number: NOT GIVEN Project Name: J 4274 (DUKE ENERGY) Project Location: NOT GIVEN

Sampling Date: 07/20/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: GP 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:	07/26/04	07/26/04	07/25/04	07/25/04	07/25/04	07/25/04
H8950-1 SDEJ427472004NBC1-4	<10.0	412	<0.005	<0.005	<0.005	<0.015
				•		
Quality Control	738	849	0.095	0.098	0.095	0.287
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	92.3	106	95.4	98.3	94.6	95.6
Relative Percent Difference	3.8	1.2	2.9	4.7	3.8	4.8

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

Date

H8950A.XLS

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

Receiving Date: 07/23/04 Reporting Date: 07/26/04 Project Number: NOT GIVEN Project Name: J 4274 (DUKE ENERGY) Project Location: NOT GIVEN Sampling Date: 07/20/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: GP Analyzed By: HM

LAB NUMBER	SAMPLE ID	SO₄ (mg/Kg)	Cl (mg/Kg)
ANALYSIS DA	TE:	07/23/04	07/23/04
H8950-1	SDEJ427472004NBC1-4	691	368
Quality Control		50.98	990
True Value QC		50.00	1000
% Recovery		102	99.0
Relative Perce	nt Difference	1.2	1.0
METHODS: E	PA 600/4-79-020	375.4	4500-CI ⁻ B*
NOTE	Analyses performed on a 1	· A	a automat

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

*Std. Methods

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

A		ood, Abliens, TX 796												IN-OF-CUS				• .		_	~	
Company Name:		001 Fax (915) 673-70	20	(505) 393	-232	8 Fa	x (5	05) 500	393	-247					المحافظ ومعاو	ANAL	YSIS		Page		
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ANALYTICAL RESULTS FOR ENVIRONMENTAL PLUS, INC. ATTN: IAIN OLNESS P.O. BOX 1558 EUNICE, NM 88231 FAX TO: (505) 394-2601

Receiving Date: 07/22/04 Reporting Date: 07/23/04 Project Number: NOT GIVEN Project Name: NOT GIVEN Project Location: J4274 Sampling Date: 07/22/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: BC

	GRO				ETHYL	TOTAL
LAB NO. SAMPLE ID	(C ₆ -C ₁₀) (mg/Kg)	(>C ₁₀ -C ₂₈) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	BENZENE (mg/Kg)	XYLENES (mg/Kg)
ANALYSIS DATE:	07/23/04	07/23/04	07/23/04	07/23/04	07/23/04	07/23/04
H8946-1 SDEJ427472204NBH13	<10.0	<10.0	< 0.005	<0.005	<0.005	<0.015
Quality Control	744	768	0.093	0.094	0.091	0.273
True Value QC	800	800	0.100	0.100	0.100	0.300
% Recovery	93.1	96.1	92.6	93.7	91.0	91.0
Relative Percent Difference	5.1	0.4	2.8	0.6	1.3	0.6

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

Date

H8946A.XLS

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Receiving Date: 07/22/04 Reporting Date: 07/23/04 Project Number: NOT GIVEN Project Name: NOT GIVEN Project Location: J4274 Sampling Date: 07/22/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: HM

LAB NUMBER	SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS DA	T E :	07/23/04	07/23/04
H8946-1	SDEJ427472204NBH13	489	480
H8946-2	PASTURE	_	32
Quality Control		48.21	990
True Value QC		50.00	1000
% Recovery		96.4	99.0
Relative Percer	nt Difference	6.2	1.0
METHODS: EP	A 600/4_70_02	375.4	SM 4500-CFB

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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

Receiving Date: 07/23/04 Reporting Date: 07/26/04 Project Number: 130004 Project Name: J 4274 (DUKE ENERGY) Project Location: NOT GIVEN

Sampling Date: 07/23/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: BC Analyzed By: HM

LAB NUMBER SAMPLE ID	SO₄ (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE:	07/23/04	07/23/04
H8947-1 NWW 15	691	512
H8947-2 BH 22	123	192
Quality Control	50.98	990
True Value QC	50.00	1000
% Recovery	102	99.0
Relative Percent Difference	1.2	1.0
METHODS: EPA 600/4-79-020	375.4	4500-CI ⁻ B*
NOTE: Analyses performed o	n 1:4 w:v aqueous	extracts.

*Std. Methods

Buy Alf Roch

7/26/04 Date

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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



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

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

Receiving Date: 08/09/04 Reporting Date: 08/10/04 Project Number: 130004 Project Name: DUKE ENERGY FIELD SERVICES Project Location: J4274 Sampling Date: 08/09/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: BC Analyzed By: AH

LAB NUMBE	R SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS D	DATE:	08/10/04	08/10/04
H8992-1	NWW COMP	143	160
H8992-2	SSBH 19'6	4.56	80
H8992-3	SWW COMP	7.92	96
Quality Cont	rol	48.21	1040
True Value (······	50.00	1000
% Recovery		96.4	104
Relative Per	cent Difference	6.2	4.0
METHODS:	EPA 600/4-79-02	375.4	SM 4500-CI B

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

nist

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 services of a vertices of the services of the services of the services of whether such claim is based upon any of the above-stated reasons or otherwise.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

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+ Cardinal cannot accept verbal changes. Piezze fax written changes to (915) 673-7020.



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

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

Receiving Date: 08/10/04 Reporting Date: 08/12/04 Project Number: J4274 Project Name: DUKE ENERGY FIELD SERVICES Project Location: NOT GIVEN Sampling Date: 08/10/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: BC

LAB NUMBEF	R 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 D	ATE:	08/11/04	08/11/04	08/11/04	08/11/04	08/11/04	08/11/04
H8995-1	BC COMP	<10.0	<10.0	<0.005	<0.005	<0.005	<0.015
							· · ·
Quality Contro	ol	777	785	0.098	0.097	0.090	0.281
True Value Q	C	800	800	0.100	0.100	0.100	0.300
% Recovery	· · · · · · · · · · · · · · · · · · ·	97.1	98.2	97.6	96.5	89.8	93.8
Relative Perc	ent Difference	3.4	2.3	0.3	2.9	3.0	2.1

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

Burgess

Date

H8995.XLS

PLEASE NOTE: Llability 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.



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

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Receiving Date: 08/10/04 Reporting Date: 08/11/04 Project Number: J4274 Project Name: DUKE ENERGY FIELD SERVICES Project Location: NOT GIVEN Sampling Date: 08/10/04 Sample Type: SOIL Sample Condition: COOL & INTACT Sample Received By: AH Analyzed By: AH

LAB NUMBER SAMPLE ID	Sulfate (mg/Kg)	Cl (mg/Kg)
ANALYSIS DATE:	08/11/04	08/11/04
H8995-1 BC COMP	200	160
Quality Control	48.21	1040
True Value QC	50.00	1000
% Recovery	96.4	104
Relative Percent Difference	6.2	4.0
METHODS: EPA 600/4-79-02	375.4	SM 4500-CI B

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

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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

ARDINAL LABORATORIES, INC 2111 Beechwood, Abilene, TX 79603		set M	arian	ud I	Hobbs, NM 88	2240	يهد تيني		<u> </u>	<u> </u>									
(915) 673-7001 Fax (915) 673-7020							,								Pa	ge	of		•
Company Name: Dyke			Watel an inclus	1	· ·	Γ				<u>.</u>	NA I	LYSIS	RE	QUE	ST				
Project Manager: PAUL MULES		BI		¥Ø)	PO #:		_												
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PLEASE NOTE: Liability and Damages. Cardinal's lability and client's exclusive simedy for any claim ansin analyses. All claims including those for negligence and any other cause whatsoever shall be deemed walves service. In no event shall Cardinal be lable for incidential or consequential damages, including without limitat attiliates or exocessore arising out of or related to the performance of services hereunder by Cardinal, regar	uniess made li m, business in less of whethe	h writing au terruptions	nd recely 1, loss of	ved by use, o	Cardinal within 30 days att if loss of profits incurred by on any of the sbove stated	ter comple y client, its reasons c	tion of t subsid or other	he applica aries, Vise,	10. 10 ¹⁰ . 10. 11		30 d and	lays paist o all costs o	lue st thë i	rate of 24	Nil be chan % per annu ng attorney	ini from the		re than te of invoice	<u>)</u> ,
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† Cardinal cannot accept verbal changes. Please fax written changes to 915-673-7020.

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APPENDIX II

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PROJECT PHOTOGRAPHS



Photo #1: Release area, looking easterly along the pipeline. Photo #2: Looking down on north test trench. Dark soil indicates contamination.





Photo #3: Excavation activities, looking easterly.



Photo #5: Final grading and contouring, looking northerly. Photo #6: Site graded and contoured, looking northerly.



Photo #4: Excavation, looking southerly.



APPENDIX III

SITE INFORMATION AND METRICS FORM AND FINAL NMOCD C-141 FORM

Duke Energy Field Services

Duke Energy	y Field Services Site	Incident Da		NMOCD Not	ified:			
U.	tion and Metrics	June 21, 200	4 @ 1300	June 21, 2004	· @ 1700			
Site: J-4-2-7-4			Assigned Site F	Reference #: 1	30004			
	uke Energy Field Services							
Street Address								
	Mailing Address: 1625 West Marland							
	: Hobbs, New Mexico	88240						
	: Mark R. Owens							
Representative		-5541						
Telephone:			·					
	released (bbls): ~ 8 barre	-ls	Recove	red (bbls): 0 ba	nrrels			
Thank volume 1			within 24 hrs and su					
			horized releases >50					
	5-25 bbls: Submit form C-141		Also applies to unaut	horized releases o	f 50-500 mcf Natural Gas)			
	Pit (LSP) Name: J-4-2							
	amination: 6" Polyethyle							
	.e., BLM, ST, Fee, Other	: Snyder Ranc	ches					
	ns: 80 feet by 35 feet							
LSP Area: ≈2,	,780 ft ²							
Location of Re	ference Point (RP):							
Location distan	nce and direction from R	:P:						
Latitude: N 32	° 40' 8.09754''							
Longitude: W	103° 29' 6.3812"							
	e mean sea level: 3,838							
Feet from Sout				<u> </u>				
Feet from West	t Section Line:							
	or 1/41/4: SW1/4 of the SW	71/4	Unit Letter:	M				
Location-Secti	ion: 8			<u></u>				
Location- Tow			· · · · · · · · · · · · · · · · · · ·					
Location- Ran			<u> </u>					
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Surface water	body within 1000 ' radiu	s of site: nor	ne					
	r wells within 1000' radi							
	ater wells within 1000' r							
	upply wells within 1000'							
	nd surface to ground wat			urface				
	mination (DC): Unknow		below ground s					
	nd water (DG – DC = Dt		<u> </u>					
	round Water		ellhead Protectio	n Arog	3. Distance to Surface Water Body			
	<50 feet: 20 points		om water source, o		<200 horizontal feet: 20 points			
	50 to 99 feet: 10 points		estic water source:		200-100 horizontal feet: <i>10 points</i>			
					200-100 horizontar reet. To points			
If Depth to GW	f 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 p		>1000 horizontal feet: 0 points					
				Surface Water Sector 0				
Site Rank $(1+2+3) = 0$								
Total Site Ranking Score and Acceptable Concentrations Parameter >19 10-19 0-9								
Benzene ¹			10-19		0-9			
BTEX	10 ppm		10 ppm		<u>10 ppm</u>			
TPH	50 ppm		50 ppm		50 ppm			
	100 ppm		1000 ppm		5000 ppm			
_ 100 ppm field	VOC headspace measuren	nent may be st	idstituted for lab a	inalysis				

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 N	otification	and	Corrective	Action

OPERATOR	🔲 Initial Report 🛛 Final Report
Name of Company	Contact
Duke Energy Field Services	Mark R. Owens
Address	Telephone No.
1625 West Marland, Hobbs, New Mexico 88240	505-397-5541
Facility Name	Facility Type
J-4-2-7-4	6" Polyethylene Pipeline

Surface Owner	Mineral Owner	Lease No.
Snyder Ranches		

LOCATION OF RELEASE

Uni	 Township	Range	Feet from the North/South	Feet from the East/West	County: Lea
Let	T19S	R35E	Line	Line	Lat. N 32° 40' 8.09754"
		2			Lon. W 103° 29' 6.3812"

NATURE O	F RELEASE						
Type of Release	Volume of Release	Volume Recovered					
Natural Gas Pipeline Fluids	8 barrels	0 barrels					
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery					
6" polyethylene pipeline operating at 25 lbs with a normal daily flow rate	June 21, 2004 @ 1100	June 21, 2004 @ 1600					
of 30 MCF							
Was Immediate Notice Given?	If YES, To Whom?						
🗌 Yes 🔲 No 🛛 Not Required	Larry Johnson						
By Whom?	Date and Hour						
Iain Olness of EPI	June 23, 2004 @ 1120						
Was a Watercourse Reached? 🔲 Yes 🛛 No	If YES, Volume Impacting the Wate	rcourse.					
	NA						
If a Watercourse was Impacted, Describe Fully.* NA							
Describe Cause of Problem and Remedial Action Taken.*							
Polyethylene line began leaking. Clamp Installed.							
Describe Area Affected and Cleanup Action Taken. * Approximately 182 yd ³ of soil contaminated above the NMOCD Remedial (remediated on site via blending to achieve the following Remedial Goals: T	Guidelines was disposed of at an approv PH = 100 mg/Kg, benzene = 10 mg/Kg	ed facility. Remaining soil was , and BTEX = 50 mg/Kg.					
I hereby certify that the information given above is true and complete to the regulations all operators are required to report and/or file certain release not public health or the environment. The acceptance of a C-141 report by the N should their operations have failed to adequately investigate and remediate of health or the environment. In addition, NMOCD acceptance of a C-141 report other federal, state or local laws and/or regulations.	ifications and perform corrective actions NMOCD marked as "Final Report" does contamination that pose a threat to grour	for releases which may endanger not relieve the operator of liability ad water, surface water, human					
Signature: / al Owens	OIL CONSERVA	TION DIVISION					
Printed Name: Mark R. Owens E-mail Address: mrowens@Duke-Energy.com	Approved by District Supervisor:						
Title: Construction Maintenance Supervisor	Approval Date:	Expiration Date:					
Date: 7-1-05 Phone: 505-397-5541	Conditions of Approval:	Attached					

* Attach Additional Sheets If Necessary