

DUKE ENERGY FIELD SERVICES 370 17th Street Suite 2500 Denver, CO 80202

303 595 3331

December 22, 2004

Mr. Jack Ford, CPG New Mexico Oil Conservation Division 1220 S. St. Francis Dr. Santa Fe, NM 87505

#### RE: Closure Report for the NMG-148C Pipeline Release (CASE #1R334) Monument, New Mexico Unit N Section 16, T19S R37E

Dear Mr. Ford:

Duke Energy Field Services, LP (DEFS) is pleased to submit for your review one copy of the Closure Report for the NMG-148C Pipeline Release remediation site located on New Mexico State Land in Lea County, New Mexico (Unit N Section 16, T19S R37E).

Based on the request in the New Mexico Oil Conservation Division (OCD) letter dated October 7, 2004, the closure report is a comprehensive report containing the results to date of all remediation and investigation activities associated with the NMG-148C Pipeline Release. The enclosed comprehensive closure report has actually been broken down into two stand alone reports with one report addressing the hydrocarbon-impacted soils and the remaining report addressing the hydrocarbon-impacted groundwater.

All activates associated with the remediation of NMG-148C pipeline release were completed following the requirements set forth in the OCD approvals. Based on the final analytical results all OCD soil remedial goals have been met, therefore, DEFS would like to request closure of the NMG-148C soil remediation activities. DEFS postpones the request for groundwater closure pending receipt and validation of the results from recently-installed well NMG-MW5.

If you have any questions regarding this report, please call me at 303-605-1718.

Sincerely

Duke Energy Field Services, LP

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Stephen Weathers, P.G. Sr. Environmental Specialist

Enclosure

cc: Larry Johnson – OCD District Office Hobbs Lynn Ward – DEFS Midland Environmental Files



December 22, 2004

Mr. Stephen Weathers Duke Energy Field Services, LP 370 17<sup>th</sup> Street, Suite 2500 Denver, CO 80202

1 RP - 91,05

Re: Summary of Groundwater Characterization and Monitoring Activities Completed at the NMG-148C-Release Site (CASE #1R334) in Lea County New Mexico Unit-N, Section 16, Township 19 South Range 37 East,

Dear Mr. Weathers:

This letter summarizes the groundwater characterization and monitoring activity information for the Duke Energy Field Services (DEFS) NMG-148C release location (site). This information was requested by the New Mexico Oil Conservation Division (OCD) in an October 8, 2004 letter. Specifically, OCD required the following items in their letter (note that the paragraph numbers correspond to their original letter):

- 3. Upon completion of the excavation activities, Duke shall install a ground water monitoring well directly adjacent to and downgradient of the excavated area to demonstrate that ground water in the source area has been remediated to New Mexico Water Quality Control Commission (WQCC) ground water standards.
- 4. The monitor well shall be installed and developed in accordance with OCD's prior investigation work plan approval.
- 5. No less than 24 hours after well development, ground water from the newly installed monitor well shall be purged, sampled and analyzed for concentrations of BTEX and polynuclear aromatic hydrocarbons using EPA approved methods and QA/QC procedures.
- 6. In order to provide a point in time snapshot of overall ground water conditions throughout the site, water quality sampling of the newly installed wells shall be coordinated to coincide with a sampling event of all previously installed monitoring wells.
- 8. A comprehensive report containing the results of all remediation and investigation activities shall be submitted to the OCD Santa Fe Office by December 31, 2004 with a copy provided to the OCD Hobbs District Office. The report shall contain:
  - a. A comprehensive description and summary of the results of all past and present soil and ground water investigation, remediation and monitoring activities.

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- b. A site map showing the location of pipelines, excavations, spills, monitoring wells, recovery wells, and any other pertinent site features.
- c. Summary tables of all past and present soil and ground water quality sampling results including copies of all recent laboratory analytical data sheets and associated QA/QC data.
- d. The disposition of all wastes generated.

This letter provides the above information.

## SUMMARY OF ACTIVITES COMPLETED

This section summarizes the investigative activities completed. It partially fulfills the requirements of paragraph 8a.

A barren area resulting from a release in the NMG-148C pipeline was first discovered the week of <u>December 9, 2002</u>. Hand excavation revealed stained and odorous soils within the barren area. DEFS commissioned the installation of a monitor well near the center of the release on December 13, 2002. Continuous samples were logged for lithology and screened with a photoionization detector (PID) until saturated materials were encountered at approximately 28 to 29 feet below ground surface (bgs). The sample with the highest PID reading and the sample immediately above the saturated materials were submitted for testing by an analytical laboratory. The results are summarized below:

3	Summary of Soil Sampling Results From Boring MW-1									
Depth Interval	FIELD PID	Benzene	Toluene	Ethyl-	Xylenes	GRO	DRO			
	Reading			Benzene						
(feet)	(PPM)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)			
5-7	452									
10-12	526									
15-17	577	14.3	60.1	10.2	41.2	657	14.9			
20-22	534									
23-25	355									
25-27	252	48.4	84.4	11.4	37.7	1,320	21.8			

Summary of Soil Sampling Results From Boring MW-1

The well, identified as NMG MW-1 on Figure 1, had a measured product thickness of approximately 1.33 feet. The depth to the top of the product was measured at 30.33 feet below top of casing (btoc) on December 31, 2002.

Well NMG MW-2 was installed on December 16, 2002 at the location shown on Figure 1. This location was selected because it is in the same swale as the release. This well was developed on December 17, 2002, and it was purged and sampled on December 18,

Mr. Stephen Weathers December 22, 2004 Page 3

2002. The sample did not contain detectable concentrations of the benzene, ethylbenzene, toluene and xylene (BTEX) constituents or total petroleum hydrocarbons (TPH) in the gasoline or diesel ranges.

Two additional wells were installed on February 5, 2003 at the locations shown on Figure 1. Well NMG MW-3 was installed as a background well northwest of the NMG-148C site. Well NMG MW-4 was installed at a location where pressure testing indicated that a leak in the NMG-148 pipeline (subsequently removed) might be present.

Samples were collected at 5-foot intervals from 5 to 25 feet in both new wells. Each sample was screened for the presence of volatiles using a photoionization detector (PID). The readings for all 10 samples from both wells were all zero (no ionizable constituents present). The samples from NMG MW-3 were not submitted for laboratory analysis because the boring was advanced in an upgradient location per prior approval by the OCD.

The five soil samples from well NMG-MW-4 were submitted to Environmental Labs of Texas for analyses for TPH as gasoline and diesel range organics. None of the soil samples contained detectable concentrations of TPH as gasoline or diesel range organics at a detection limit of 10 mg/kg (ppm).

Well NMG MW-1 was removed by Environmental Plus Incorporated (EPI) in January 2003 during their excavation activities. Their activities included the excavation of materials inside the footprint shown in Figure 1 to a depth of approximately 24 feet. Another DEFS contractor removed the NMG-148 pipeline within the entire study area. These activities are discussed in a separate document.

Wells NMG-MW2, NMG-MW3, NMG-MW4 and the excavation were subsequently sampled on the following dates:

- February 2, 2003
- June 2, 2003
- September 23, 2003
- December 15, 2003
- January 23, 2004
- March 22, 2004
- June 21, 2004
- September 9, 2004
- December 10, 2004

Well NMG-MW5 was installed on December 15, 2004 at the location shown on Figure 1. This location was selected to minimize interference with future reseeding activities. Cuttings samples were screened with a PID at 5 foot intervals, and none of the measurements were above background. There were no visual or olfactory indications of hydrocarbon impacts. The well completion information for all wells excluding Mr. Stephen Weathers December 22, 2004 Page 4

NMG-MW1 is summarized in Table 1.

NMG-MW5 was developed on December 16, 2004 and sampled on December 17, 2004 during the same week as the other site wells to fulfill the OCD requirements in paragraphs 3, 4, 5 and 6. The results from this well were unavailable as of the date of this report. They will be provided upon receipt and validation.

#### DISPOSITION OF WASTES

This section summarizes the disposition of wastes as required above in OCD paragraph 8d. The soils cuttings were drummed and disposed of at an OCD approved landfarm. All affected groundwater was disposed at the DEFS Linan Ranch facility.

## SUMMARY OF DATA COLLECTED

This section summarizes the water level and chemistry data collected during the project to comply with the requirements in OCD paragraphs 8a, 8b and 8c above. The depths to groundwater were measured during each sampling episode. The resulting water-table elevations that were calculated based upon these measurements are tabulated in Table 2.

The December 2004 depths in feet for the four monitoring wells were measured as follows:

- NMG-MW2: 25.16 feet
- NMG-MW3: 26.10 feet
- NMG-MW4: 27.30 feet
- NMG-MW5: 27.07 feet

The elevation of well MW-5 was not established; however the information indicates that the depth to water in it is similar to that measured in the other three wells.

Hydrographs for wells NMG-MW2, NMG-MW3 and NMG-MW4 are shown on Figure 2. The hydrographs show that the water table at each location responds to seasonal climatic changes in a similar fashion. Figure 2 shows that the rains that begin in March 2004 and continued periodically through the rest of the year resulted in substantial increases in the water table elevations beneath the site.

The organic data for the wells is summarized in Table 3. The laboratory reports for the September 2004 and the December 2004 sampling efforts are attached to this report because they have not been previously provided to the OCD. Examination of Table 3 shows that the BTEX constituents have not been detected in any of the nine sampling episodes with the exception of the December 2003 episode where either laboratory of field contamination produced anomalous results. TPH as gasoline and diesel range

Mr. Stephen Weathers December 22, 2004 Page 5

organics were also not detected in wells MW-2, MW-3 and MW-4 during each well's initial sampling episode.

The inorganic data collected from the NMG wells is summarized in Table 4. There were no anomalous concentrations noted. The was a substantial difference between the total (unfiltered) and dissolved (filtered) metals barium, iron and manganese. This result was expected given the relatively turbid nature of the samples when they were acidified to preserve them.

The BTEX concentrations measured in the excavation are summarized in Table 5 and graphed over time in Figure 4. Examination Figure 4 indicates that the concentrations rapidly attenuated to a concentration that was near or below the 0.010 mg/l groundwater standard from the New Mexico Water Quality Control Commission. It is also important to note that no visible sheen was noted on the water within the excavation since a wind-driven aeration unit was installed in August 2003.

## CONCLUSIONS

The data collected to date indicate that the remediation activities completed by EPI successfully removed the vast majority of the hydrocarbon mass from the release area. The wind-driven aeration unit subsequently enhanced removal of the dissolved-phase hydrocarbons from the excavation until only trace concentrations remain. Hydrocarbons have never been detected in the down-gradient wells, establishing the very-limited extent of any dissolved-phase hydrocarbon migration.

I conclude that no further actions related to groundwater monitoring are necessary at this site. I recommend that the wells associated with this site be plugged and abandoned in a appropriate fashions.

Do not hesitate to contact me if you have any questions or comments on this report.

Respectfully Submitted, AMERICAN ENVIRONMENTAL CONSULTING, LLC

Michael H. Stewart, P.E., C.P.G. Principal Engineer

Attachments



Well	Date Installed	Total Depth	Screened Interval	1.2. KA 1900 COLORD COLSE	Bentonite Interval
NMG MW-2	12/16/02	35	20-35	18-35	3-18
NMG MW-3	2/5/03	37	17-37	15-37	3-15
NMG MW-4	2/5/03	37	17-37	15-37	3-15
NMG MW-5	12/15/04	35	20-35	11-20	3-11

All units are feet MW-1 destroyed during remediation in Jan/Feb 2003

Well	2/7/03	6/2/03	9/23/03	12/15/03	3/22/04	6/21/04	9/19/2004	12/10/2004
NMG MW-2	3.617.05	3,617.00	3.616.93	3,616.89	3,616.84	3,618.06	3.617.25	3,621.74
NMG MW-3	3,620.02	3,619.99	3,619.94	3,619.94		3,620.43	3,620.09	3,623.70
NMG MW-4	3,615.77	3,615.71	3,615.64	3,615.57	3,615.52	3,616.34	3,615.86	3,618.78

All units are feet

Well	Sampling Date	Benzene	Toluene	Ethylbenzene	Total Xylenes	TPH GRO	TPH DRO
	10/17/00			0.001	0.001		
NMG MW-2	12/17/02	< 0.001	< 0.001	<0.001	< 0.001	<1.0	<1.0
NMG MW-2	6/2/03	< 0.001	< 0.001	<0.001	< 0.001		
NMG MW-2	9/23/03	<0.001	<0.001	<0.001	<0.001		
NMG MW-2	12/15/03	0.034	< 0.001	<0.001	<0.001		
NMG MW-2 (dup)	12/15/03	< 0.001	<0.001	<0.001	<0.001		
NMG MW-2	1/23/04	< 0.001	< 0.001	<0.001	<0.001		
NMG MW-2	3/22/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-2 (dup)	3/22/04	< 0.001	< 0.001	<0.001	<0.001		
NMG MW-2	6/21/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-2 (dup)	6/21/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-2	9/19/04	<0.001	< 0.001	<0.001	<0.001		
NMG MW-2 (dup)	9/19/04	<0.001	< 0.001	<0.001	<0.001		
NMG MW-2	12/10/04	< 0.001	< 0.001	<0.001	<0.001		
NMG MW-2 (dup)	12/10/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-3	2/7/03	<0.001	<0.001	<0.001	<0.001	<3.0	<3.0
NMG MW-3	6/2/03	<0.001	<0.001	<0.001	<0.001	-5.0	-5.0
NMG MW-3	9/23/03	< 0.001	< 0.001	<0.001	< 0.001		
NMG MW-3	12/15/03	0.002	< 0.001	<0.001	<0.001		
NMG MW-3	1/23/04	< 0.002	<0.001	<0.001	<0.001		
NMG MW-3	3/22/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-3	6/21/04	<0.001	< 0.001	<0.001	<0.001		
NMG MW-3	9/19/04	<0.001	<0.001	<0.001	<0.001		
NMG MW-3	12/10/04	<0.001	<0.001	<0.001	<0.001		
	12,10,01	0.001	0.001	0.001	0.001		
NMG MW-4	2/7/03	<0.001	<0.001	<0.001	< 0.001	<3.0	<3.0
NMG MW-4	6/2/03	<0.001	< 0.001	<0.001	0.001		
NMG MW-4	9/23/03	<0.001	<0.001	<0.001	< 0.001		
NMG MW-4	12/15/03	0.038	<0.001	<0.001	<0.001		
NMG MW-4	1/23/04	<0.001	< 0.001	<0.001	< 0.001		
NMG MW-4	3/22/04	<0.001	< 0.001	<0.001	< 0.001		
NMG MW-4	6/21/04	<0.001	<0.001	<0.001	< 0.001		
NMG MW-4	9/19/04	< 0.001	< 0.001	< 0.001	< 0.001		
NMG MW-4	12/10/04	< 0.001	< 0.001	< 0.001	< 0.001		

Table 3 – Summary of Organic Data from The NMG-148C Study Area Wells

Notes: 1) All units mg/l

2) Blank cell indicates sample not analyzed for that parameter

Well	Calcium	Magnesium	Potassium	Sodium	Bicarbonate
NMG MW-	2 138	3 21.1	6.78	68.5	195
NMG MW-	-3 49.8	3 7.02	3.64	39.4	141
NMG MW-	4 57.5	5 8.4	4.36	52.5	152

Table 4 – Summary of Inorganic Data from The NMG-148C Study Area Wells

Well	Chloride	Sulfate	Total Dissolved Solids	Barium (total)	Barium (dissolved)
NMG MW-2	62	93.8		7.45	0.496
NMG MW-3	31.9	55.1	64	726	0.591
NMG MW-4	40.8	90.7	295	1.18	0.079

Well	Iron (total)	Iron (dissolved)		Manganese (dissolved)	
NMG MW-2	88.8	0.148	0.787	0.018	
NMG MW-3	12.6	0.015	0.214	0.009	
NMG MW-4	26.5	0.036	0.452	0.046	

Notes: 1) all units are mg/l

2) carbonate and hydroxyl alkalinity were not detected at 0.10 mg/l in the above samples

Well	Sampling Date	Benzene	Taluana	Ethylbenzene	Total
wen	Dale	Denzene	Toluene		Aylenes
	<u> </u>				0.463/0.4
Excavation	2/14/03	4.25/4.46	3.15/3.01	1.63/1.54	36
Excavation (north)	4/17/03	0.055	0.043	< 0.002	0.003
Excavation (south)	4/17/03	0.048	0.038	< 0.002	0.003
Excavation (sw corner)	6/2/03	0.154	0.260	0.039	1.25
Excavation (sw corner)	9/23/03	0.013	0.014	0.001	0.003
Excavation (sw corner)	10/31/03	0.025	0.026	0.002	0.007
Excavation (sw corner)	12/15/03	0.041	0.032	0.002	0.008
Excavation (sw corner)	1/13/04	0.0395	0.0393	0.00146	0.00809
Excavation (sw corner)	1/23/04	0.0531	0.0487	0.00184	0.00854
Excavation (sw corner)	3/22/04	0.011	0.00875	< 0.001	0.0015
Excavation (ne corner)	1/13/04	0.0347	0.0361	0.00140	0.00766
Excavation (ne corner)	1/23/04	0.0301	0.0291	0.00121	0.00627
Excavation (ne corner)	3/22/04	0.00781	0.00640	< 0.001	0.00111
Excavation (se corner)	6/21/04	0.000457	< 0.001	< 0.001	0.000659
Excavation (se corner)	9/19/04	0.0175	0.0384	0.00112	0.0043
All units mg/l					· · · · · · · · · ·

## Table 5 – Summary of Data from The NMG-148C Excavation



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## **LABORATORY REPORTS FOR**

## **SEPTEMBER 2004 AND DECEMBER 2004**



# Analytical Report

Prepared for:

Michael Stewart REMEDIACON P.O. Box 302 Evergreen, CO 80437

Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Location: Lea County, New Mexico

Lab Order Number: 4I22007

Report Date: 09/28/04

REMEDIACON P.O. Box 302 Evergreen CO, 80437 

 Project:
 DEFS-NMG-148C (4 in. Line)

 Project Number:
 None Given

 Project Manager:
 Michael Stewart

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
NMG MW-3	4122007-01	Water	09/20/04 14:00	09/22/04 11:30
NMG Excavation	4122007-02	Water	09/20/04 14:15	09/22/04 11:30
NMG MW-2	4122007-03	Water	09/20/04 14:45	09/22/04 11:30
NMG MW-4	4122007-04	Water	09/20/04 14:45	09/22/04 11:30
NMG Trip Blank	4122007-05	Water	09/20/04 00:00	09/22/04 11:30

Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Project Manager: Michael Stewart

#### Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NMG MW-3 (4122007-01) Water			•						
Benzene	ND	0.00100	mg/L	1	EI42708	09/24/04	09/24/04	EPA 8021B	
Toluene	ND	0.00100	11	"	"	"	"	u	
Ethylbenzene	ND	0.00100	"		"	"	"	*	
Xylene (p/m)	ND	0.00100		"	"	**	"	٣	
Xylene (0)	ND	0.00100	"	n	"	*	"	**	
Surrogate: a,a,a-Trifluorotoluene		118%	80-1	120	"	"	"	11	
Surrogate: 4-Bromofluorobenzene		85.0 %	80-1	120	n	"	"	"	
NMG Excavation (4122007-02) Water									
Benzene	0.0175	0.00100	mg/L	1	EI42708	09/24/04	09/24/04	EPA 8021B	
Toluene	0.0384	0.00100		**	"	*	•	*	
Ethylbenzene	0.00112	0.00100	"	v	"	*	19		
Xylene (p/m)	0.00313	0.00100	"	n	"	"	"	n	
Xylene (0)	0.00117	0.00100	"	"	H	"	"	**	
Surrogate: a,a,a-Trifluorotoluene		130 %	80	120	"	"	"	"	S-0
Surrogate: 4-Bromofluorobenzene		89.0 %	80-	120	"	"	"	"	
NMG MW-2 (4122007-03) Water									
Benzene	ND	0.00100	mg/L	1	EI42708	09/24/04	09/24/04	EPA 8021B	
Toluene	ND	0.00100			*	н	59	"	
Ethylbenzene	ND	0.00100	*	"	*	"	**	**	
Xylene (p/m)	ND	0.00100	"	"	"	"	"	**	
Xylene (o)	ND	0.00100	"	"	u	"	"	11	
Surrogate: a,a,a-Trifluorotoluene		120 %	80-	120	"	"	"	11	
Surrogate: 4-Bromofluorobenzene		91.0 %	80-	120	"	"	"	"	
NMG MW-4 (4122007-04) Water									
Benzene	ND	0.00100	mg/L	1	EI42708	09/24/04	09/24/04	EPA 8021B	
Toluene	ND	0.00100	"	н	"		"	"	
Ethylbenzene	ND	0.00100	"	"	"	11	u	"	
Xylene (p/m)	ND	0.00100	••	"			u		
Xylene (o)	ND	0.00100	"	"	"	"	u	*	
Surrogate: a,a,a-Trifluorotoluene		120 %	80-	120	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		82.0 %	80-	120	"	"	"	"	

Environmental Lab of Texas

Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Project Manager: Michael Stewart

#### Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
NMG Trip Blank (4122007-05) Water									
Benzene	ND	0.00100	mg/L	1	EI42708	09/24/04	09/24/04	EPA 8021B	
Toluene	ND	0.00100	"	n	"		"	"	
Ethylbenzene	ND	0.00100	"		"	*		"	
Xylene (p/m)	ND	0.00100	"	*	"	*	**	"	
Xylene (0)	ND	0.00100		"	"	"	"	**	
Surrogate: a,a,a-Trifluorotoluene		119%	80-	120	"	n	"	"	
Surrogate: 4-Bromofluorobenzene		87.5 %	80-	120	"	"	"	"	

Environmental Lab of Texas

#### Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Project Manager: Michael Stewart

#### **Organics by GC - Quality Control**

Environmenta	l Lab of	Texas
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		Reporting		Spike	Source		%REC		RPD	_
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EI42708 - EPA 5030C (GC)										
Blank (EI42708-BLK1)				Prepared &	Analyzed:	09/24/04				
Benzene	ND	0.00100	mg/L							
Foluene	ND	0.00100								
Ethylbenzene	ND	0.00100	"							
Xylene (p/m)	ND	0.00100	**							
Xylene (0)	ND	0.00100	**							
Surrogate: a,a,a-Trifluorotoluene	23.5		ug/l	20.0		118	80-120			
Surrogate: 4-Bromofluorobenzene	17.1		"	20.0		85.5	80-120			
LCS (EI42708-BS1)				Prepared &	Analyzed:	09/24/04				
Benzene	80.3		ug/l	100		80.3	80-120			
Toluene	88.5		"	100		88.5	80-120			
Ethylbenzene	81.6		"	100		81.6	80-120			
Xylene (p/m)	176		"	200		88.0	80-120			
Xylene (0)	82.2		"	100		82.2	80-120			
Surrogate: a,a,a-Trifluorotoluene	21.9		"	20.0		110	80-120			
Surrogate: 4-Bromofluorobenzene	16.5		"	20.0		82.5	80-120			
Calibration Check (EI42708-CCV1)	Prepared & Analyzed: 09/24/04									
Benzene	97.3		ug/l	100		97.3	80-120			
Toluene	94.1		**	100		94.1	80-120			
Ethylbenzene	94.4			100		94.4	80-120			
Xylene (p/m)	190		"	200		95.0	80-120			
Xylene (0)	90.0		"	100		90.0	80-120			
Surrogate: a,a,a-Trifluorotoluene	21.3		"	20.0		106	80-120			
Surrogate: 4-Bromofluorobenzene	19.7		"	20.0		98.5	80-120			
Duplicate (EI42708-DUP1)	Sou	rce: 4122007-0	02	Prepared &	z Analyzed:	09/24/04				
Benzene	0.0210	0.00100	mg/L		0.0175			18.2	20	
Toluene	0.0407	0.00100	"		0.0384			5.82	20	
Ethylbenzene	0.00128	0.00100	"		0.00112			13.3	20	
Xylene (p/m)	0.00322	0.00100			0.00313			2.83	20	
Xylene (o)	0.00125	0.00100	"		0.00117			6.61	20	
Surrogate: a,a,a-Trifluorotoluene	22.9		ug/l	20.0		114	80-120			
Surrogate: 4-Bromofluorobenzene	16.2		"	20.0		81.0	80-120			

REMEDIACON P.O. Box 302 Evergreen CO, 80	137	Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Project Manager: Michael Stewart	Fax: 720-528-81 Reported: 09/28/04 09:43
			09/20/04/09/4
		Notes and Definitions	
5-04 The s	surrogate recovery for this sample is outside of	established control limits due to a sample matrix effect.	
DET Analy	te DETECTED		
ID Analy	te NOT DETECTED at or above the reporting limit		
VR Not R	eported		
ry Samp	le results reported on a dry weight basis		
PD Relati	ive Percent Difference		
.CS Labor	atory Control Spike		
AS Matri	x Spike		
Dup Dupli	cate		
Report Approv	ved By:	Date:	
Raland K Tut	tle, Lab Manager	Jeanne Mc Murrey, Inorg. Tech Director	
	ne, Lab Director, Org. Tech Director	James L. Hawkins, Chemist/Geologist Sandra Biezugbe, Lab Tech.	
	is intended only for the use of the individuation at is privileged and confidential.	al (s) or entity to whom it is addressed, and may co	ontain
If you have rea	ceived this material in error, please notify	us immediately at 432-563-1800.	

Environmental Lab of Texas

## Environmental Lab of Texas Variance / Corrective Action Report – Sample Log-In

Client:	Benediacoo
---------	------------

Date/Time: 12-15-04 @ 1000

Order #: 445008

Initials: JMM

## Sample Receipt Checklist

Temperature of container/cooler?	Yes	> No	05 C
Shipping container/cooler in good condition?	Yes	No	
Custody Seals intact on shipping container/cooler?	Yes	No	Not present
Custody Seals intact on sample bottles?	Tes	No	Not present
Chain of custody present?	(Yes)	No	
Sample Instructions complete on Chain of Custody?	res	No	
Chain of Custody signed when relinquished and received?	Tes	No	
Chain of custody agrees with sample label(s)	Tes	No	
Container labels legible and intact?	Tes	No	
Sample Matrix and properties same as on chain of custody?	Fess	No	
Samples in proper container/bottle?	Tes	No	
Samples properly preserved?	Tes	No	
Sample bottles intact?	Tes	No	
Preservations documented on Chain of Custody?	(Fes)	No	
Containers documented on Chain of Custody?	(Yes,	No	
Sufficient sample amount for indicated test?	(Ves)	No	
All samples received within sufficient hold time?	(res	No	
VOC samples have zero headspace?	Yes	No	Not Applicable

Other observations:

## Variance Documentation:

Contact Person: Regarding:	Date/Time:	Contacted by:	
Corrective Action Taken:			
		•	

-



# Analytical Report

Prepared for: Michael Stewart REMEDIACON

P.O. Box 302 Evergreen, CO 80437

Project: DEFS-NMG-148C (4 in. Line) Project Number: None Given Location: Lea County, NM

Lab Order Number: 4L15008

Report Date: 12/20/04

REMEDIACONProject:DÉFS-NMG-148C (4 in. Line)Fax: 720-528-8132P.O. Box 302Project Number:None GivenReported:Evergreen CO, 80437Project Manager:Michael Stewart12/20/04 18:03

#### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
MW-2	4L15008-01	Water	12/13/04 14:05	12/15/04 10:00
MW-3	4L15008-02	Water	12/13/04 13:40	12/15/04 10:00
MW-4	4L15008-03	Water	12/13/04 14:20	12/15/04 10:00
MW-103	4L15008-04	Water	12/13/04 14:40	12/15/04 10:00
Trip Blank	4L15008-05	Water	12/13/04 00:00	12/15/04 10:00

REMEDIACON		P	roject: DEFS	S-NMG-1	48C (4 in. I	_ine)		Fax: 720-528-8132		
P.O. Box 302		Project Number: None Given					Reported:			
Evergreen CO, 80437			nager: Micha		art			12/20/04		
		Or	ganics by	GC						
		Environn	nental La	b of Te	exas			•		
Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Not	
MW-2 (4L15008-01) Water										
Benzene	ND	0.00100	mg/L	1	EL41705	12/16/04	12/16/04	EPA 8021B		
Toluene	ND	0.00100	п			"	н	"		
Ethylbenzene	ND	0.00100	"	"		*1	н			
Xylene (p/m)	ND	0.00100	"	14		н	"			
Xylene (o)	ND	0.00100	"	"	"		п			
Surrogate: a,a,a-Trifluorotoluene		88.1%	80-12	0	"		"	"		
Surrogate: 4-Bromofluorobenzene		93.6 %	80-12		"	"	0	"		
MW-3 (4L15008-02) Water										
Benzene	ND	0.00100	mg/L		EL41705	12/16/04	12/16/04	EPA 8021B		
Toluene	ND	0.00100	и	0		и	u.	"		
Ethylbenzene	ND	0.00100				н		n		
Xylene (p/m)	ND	0.00100	u			"	n			
Xylene (o)	ND	0.00100	н	"	1+	"	"			
Surrogate: a,a,a-Trifluorotoluene		85.6 %	80-12	0	,,	"	"	"		
Surrogate: 4-Bromofluorobenzene		99.8 %	80-12	0	"	"	"	н		
MW-4 (4L15008-03) Water										
Benzene	ND	0.00100	mg/L	1	EL41705	12/16/04	12/16/04	EPA 8021B		
Toluene	ND	0.00100	n		14	*		"		
Ethylbenzene	ND	0.00100	11	"	14	"		"		
Xylene (p/m)	ND	0.00100	"	D.	*	u.	*1	"		
Xylene (o)	ND	0.00100		IF.	11	n	"	"		
Surrogate: a,a,a-Trifluorotoluene		85.9 %	80-12	0	"	"	"	n		
Surrogate: 4-Bromofluorobenzene		98.0 %	80-12	0	"	"	"	n		
MW-103 (4L15008-04) Water										
Benzene	ND	0.00100	mg/L	1	EL41705	12/16/04	12/16/04	EPA 8021B		
Toluene	ND	0.00100	"		и	q	п	D		
Ethylbenzene	ND	0.00100	"			11	"			
Xylene (p/m)	ND	0.00100	•			ų.	n	0		
Xylene (o)	ND	0.00100	н			"	"	н		
Surrogate: a,a,a-Trifluorotoluene		91.3 %	80-12	0	"	"	"	"		
Surrogate: 4-Bromofluorobenzene		100 %	80-12	0	"	"	"	"		

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Page 2 of 6

None Cium
Number: None Given Reported:
Manager: Michael Stewart 12/20/04 18:03
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## Organics by GC

#### **Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
Trip Blank (4L15008-05) Water						-			
Benzene	ND	0.00100	mg/L	1	EL41705	12/16/04	12/16/04	EPA 8021B	
Toluene	ND	0.00100	"	u	*1	**	"		
Ethylbenzene	NĎ	0.00100						**	
Xylene (p/m)	ND	0.00100		"		ŀ	11	19	
Xylene (o)	ND	0.00100		"	**				
Surrogate: a,a,a-Trifluorotoluene		90.1 %	80-12	20	"	"	"	"	
Surrogate: 4-Bromofluorobenzene		92.9 %	80-12	20	"	"	,,	"	

Environmental Lab of Texas

REMEDIACON		Pr	oject: DI	EFS-NMG-14	18C (4 in. I	Line)			Fax: 720-	528-8132
P.O. Box 302		Project Nu	5						Repo	rted:
Evergreen CO, 80437				ichael Stewar	t		. 811		12/20/04 18:03	
	0	rganics by	GC - (	Quality Co	ontrol					
		Environm	ental I	Lab of Te	xas					
· ·	~ 1	Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes
Batch EL41705 - EPA 5030C (GC)	····									
Blank (EL41705-BLK1)				Prepared &	2 Analyzed	12/16/04				
Benzene	ND	0.00100	mg/L							
Foluene	ND	0.00100	"							
Ethylbenzene	ND	0.00100								
Xylene (p/m)	ND	0.00100								
Xylene (o)	ND	0.00100	•							
Surrogate: a,a,a-Trifluorotoluene	94.4		ug/l	100		94.4	80-120			
Surrogate: 4-Bromofluorobenzene	96.8		"	100		96.8	80-120			
LCS (EL41705-BS1)	Prepared & Analyzed: 12/16/04									
Benzene	99.0		ug/l	100		99.0	80-120			
Toluene	99.5			100		99.5	80-120			
Ethylbenzene	99.6		14	100		99.6	80-120			
Xylene (p/m)	219			200		110	80-120			
Xylene (0)	107			100		107	80-120			
Surrogate: a,a,a-Trifluorotoluene	108		"	100		108	80-120			
Surrogate: 4-Bromofluorobenzene	116		"	100		116	80-120			
Calibration Check (EL41705-CCV1)				Prepared &	& Analyzed	: 12/16/04				
Benzene	93.3		ug/l	100		93.3	80-120			
Toluene	94.9			100		94.9	80-120			
Ethylbenzene	93.1			100		93.1	80-120			
Xylene (p/m)	199			200		99.5	80-120			
Xylene (o)	96.4			100		96.4	80-120			
Surrogate: a,a,a-Trifluorotoluene	103		"	100		103	80-120			
Surrogate: 4-Bromofluorohenzene	116		"	100		116	80-120			
Matrix Spike (EL41705-MS1)		irce: 4L12004-	06	Prepared &	& Analyzed	: 12/16/04				
Benzene	101		ug/l	100	ND	101	80-120			
Toluene	101		0	100	ND	101	80-120			
Ethylbenzene	101			100	ND	101	80-120			
Xylene (p/m)	208		17	200	ND	104	80-120			
Xylene (0)	100			100	ND	100	80-120			
Surrogate: a,a,a-Trifluorotoluene	113		"	100		113	80-120			
Surragate: 4-Bromofluorobenzene	113		"	100		113	80-120			

REMEDIACON	Project: DEFS-NMG-148C (4 in. Line)	Fax: 720-528-8132
P.O. Box 302	Project Number: None Given	Reported:
Evergreen CO, 80437	Project Manager: Michael Stewart	12/20/04 18:03

## **Organics by GC - Quality Control**

**Environmental Lab of Texas** 

		Reporting		Spike	Source		%REC		RPD	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Notes

Batch EL41705 - EPA 5030C (GC)

Matrix Spike Dup (EL41705-MSD1)	Source: 41	Source: 4L12004-06			12/16/04			
Benzene	94.2	ug/l	100	ND	94.2	80-120	6.97	20
Toluene	96.0	"	100	ND	96.0	80-120	5.08	20
Ethylbenzene	94.8	"	100	ND	94.8	80-120	6.33	20
Xylene (p/m)	200	"	200	ND	100	80-120	3.92	20
Xylene (o)	97.3	"	100	ND	97.3	80-120	2.74	20
Surrogate: a,a,a-Trifluorotoluene	102	"	100		102	80-120		
Surrogate: 4-Bromofluorobenzene	117	"	100		117	80-120		

Environmental Lab of Texas

REMEDIACON P.O. Box 302 Evergreen CO, 80437		Project Number:	DEFS-NMG-148C (4 in. Line) None Given Michael Stewart	Fax: 720-528-8132 <b>Reported:</b> 12/20/04 18:03
		Notes and De	finitions	
DET	Analyte DETECTED			
ND	Analyte NOT DETECTED at or above the reporting limit	t		
NR	Not Reported			
dry	Sample results reported on a dry weight basis			
RPD	Relative Percent Difference			
LCS	Laboratory Control Spike			
MS	Matrix Spike			
Dup	Duplicate			

Report Approved By:

Raland K thinks

12/20/2004

Raland K. Tuttle, Lab Manager Celey D. Keene, Lab Director, Org. Tech Director Peggy Allen, QA Officer Jeanne Mc Murrey, Inorg. Tech Director James L. Hawkins, Chemist/Geologist Sandra Sanchez, Lab Tech.

Date:

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12600 West I-20 East - Odessa, Texas 79705 - (432) 563-1800 - Fax (432) 563-1713

## **Environmental Lab of Texas**

12600 West I-20 Eas Odessa, Texas 7976		00									(	сна	IN OI	= CU	stc	DY F	REC	ORE	) AN	D AN	IALI	YSIS	REG	QUES	T		
Project Ma	mager: Michael H. Stewart	······											Pr	ojec	t Na	me:	DE	FS	- N	IMG	<u>i-1</u> 2	<u>48C</u>	: (4"	" Lir	<u>1e)</u>		
Company	Name Remediacon, Inc.													Pr	ojec	:{ #: _											
Company Ac	idress: P. O. Box 302												I	Ргоје	ect L	.oc: _	Lea	эC	oun	nty,	Ne	w N	lexi	ico			
City/Sta	nte/Zip: Evergreen, Colorado 804	37													P	) #: _											
Telepho	ne No: <u>(303) 674-4370</u>		Fax No	»: <u>(72</u>	:0)	528	-813	2																			
Sampler Sig	nature: D. d. T. Liteen	M				-																				_	
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				-	┢	TT	reserv	rative		-		Matr	ix T	1006				3 Se		280							<b>—</b>
4L15008		Date Sampled	Time Sampled	No. of Containers $HO_{M}$	9	HNO <sub>3</sub>	HCI NaOH	,so,	None	ther ( Specify)	Water	rdge	son Other (specify):	TPH: 418.1 8015M 1005 1	Cations (Ca. Mg. Na. K)	Anions (Cl, SO4, CO3, HCO3)	R/ESP/CEC	Metals: As Ag Ba Cd Cr Pb Hg	Volatijes Semivolatilas	BTEX 8021B/5030 or BTEX 8280		N.O.R.M.				ISH TAT (Pre-Schedu	Standard TAT
LAB # (teb use only)	FIELD CODE			$\frac{z}{2}$		den ander		Ĩ	ž		3 V	δ <i>ι</i>	õ jõ	<u>ar</u>	Carl	An	<u>8</u>	*	<u> </u>			z	┝─┼			Ĕ	A Sta
-0  -02	<u>Mw-2</u> Mw-3	12/13/04	1405	2			-	┝╌┥			+	-					-	+	+			+	┝╌┤	+		┨──	-
-01	<u>Mw-5</u>	12/13/04		2	<b>i</b>	<b></b>	+	╀┤	$\rightarrow$			╋	+	┢		-+	+	+	╋	TV	╆	┼┤	$\vdash$	+	+	╉┦	1
	Mw-103	12/13/04		2		$\vdash$	4	+	$\left  \right\rangle$		7	╈	+	┢			+	-	+	1	$\uparrow$	$\left  \right $	$\vdash$	+	+		1
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C-actal I-structions	Dear of face a second of take provide the Million of					Ц		Ц								*							Ц	H			
	Send fax copy of lab report to Michael Field Services, 303 17th Street, Suite 2			t and i	INVC	ce u	) Step	)nen	1 VVE	eatri	iers,	Du	Ke e	nerç		Tem	oera	uture	ainer Upo Somi	in Re	ceipt			Y)	Ň		
Relinquished by:	Date Tim Revolu 12/15/04 1000				*****						Date	9		Time		1		-	Ø								
Relinquished by:	Date Tirr	Received by EL		2						12	Date -45			Time CCC	20												

## Environmental Lab of Texas Variance / Corrective Action Report – Sample Log-In

Client:	Remediacoo
---------	------------

Date/Time: 12-15-04 @ 1000

Order #: 425008,

## Sample Receipt Checklist

Temperature of container/cooler?	Yes	> No	05	С
Shipping container/cooler in good condition?	Yes	No		
Custody Seals intact on shipping container/cooler?	Yes	No	Not present	
Custody Seals intact on sample bottles?	Tes	No	Not present	
Chain of custody present?	Yes	No		
Sample Instructions complete on Chain of Custody?	res	No		
Chain of Custody signed when relinquished and received?	Pres >	No		
Chain of custody agrees with sample label(s)	Tes	No		
Container labels legible and intact?	Fres	No		
Sample Matrix and properties same as on chain of custody?	Yes'	No		
Samples in proper container/bottle?	Yes	No		
Samples properly preserved?	Tes	No	}	
Sample bottles intact?	(Yes)	No	]	
Preservations documented on Chain of Custody?	(res	No		
Containers documented on Chain of Custody?	(Fes	No		
Sufficient sample amount for indicated test?	(Yes)	No		
All samples received within sufficient hold time?	res	No		
VOC samples have zero headspace?	res	No	Not Applicabl	е

-

Other observations:

### Variance Documentation:

Contact Person: Regarding:	Date/Time:	Contacted by:	1997 - Maria Santo anta da Calendaria
Corrective Action Taken:			
<b>999 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997</b>			
*****			aran galan yang nangung sahang g
			····



# NMG-148C RELEASE SITE

# SOIL REMEDIATION CLOSURE DOCUMENTATION

UL-N-SE4 of the SW4, Section 16, T19S, R37E Latitude 32°39'21.32"N - Longitude 103°15'32.90"W ~2.25 miles north northeast of Monument Lea County, New Mexico

DECEMBER 2004

PREPARED BY

ENVIRONMENTAL PLUS, INC. 2100 AVENUE O P.O. BOX 1558 EUNICE, NEW MEXICO



#### Environmental Assessment and Remediation Report

### Duke Energy Field Services NMG-148 C-Line

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.

This report was prepared by:	
fat Marland	
Patrick W. McCasland	Date
This report was reviewed by:	
Iain Olness, PG	Date

i

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## 1.0 SUMMARY

In December 2002, Duke Energy Field Services (Duke) retained Environmental Plus, Inc. (EPI) of Eunice, New Mexico to delineate the extent of pipeline fluid contamination and remediate the historical NMG-148 C-Line release site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases (August 13, 1993). The land is owned by the State of New Mexico. The initial form C-141 submitted to the NMOCD by Duke reported an assumed natural gas pipeline fluid release of >25 barrels (bbls) with 0 bbls recovered. The NMG-148 C-Line is part of the Duke gas gathering system and as such is exempt from the EPA Resource Conservation and Recovery Act 40 CFR (RCRA) Subtitle C hazardous waste characterization requirements. The ground water depth at the site is -28 feet\_below\_ground surface ('bgs) and is based on water level measurements of a temporary monitor well (MW) installed adjacent to what was believed to be the leak origin. The NMOCD site ranking thresholds for the "Constituents of Concern" (CoCs) in soil are as follows:

Soil from the surface to 28'bgs:

- 100 mg/Kg = Total Petroleum Hydrocarbon EPA method 8015m (TPH<sup>8015m</sup>)
- 10 mg/Kg = Benzene
- 50 mg/Kg = BTEX (mass sum of benzene, toluene, ethylbenzene, and m, o, & p xylenes)

The historical release occurred in the 4"-steel NMG-148 C-Line apparently due to corrosion as was evidenced by the line repair clamp. Initially, delineation occurred during excavation of a barren area in the right of way that exposed a previously installed line repair clamp. Subsequent excavation to 10'bgs indicated hydrocarbon contamination. Given the shallow ground water in the area, a temporary monitor/observation well was installed 10 feet west of the clamp, sampling the soil discretely at 5 foot intervals. The bore was found to be contaminated with volatile hydrocarbon, characteristic of raw natural gas pipeline condensate, down to the ground water interface with a measurable thickness of liquid phase hydrocarbon observed atop the ground water. The NMOCD was immediately notified of the impact. The ground water issues are being addressed separately. To delineate the horizontal extent of contamination, sample trenches were excavated to 3'bgs and sampled from the leak origin clamp to various points laterally along the cardinal radians. Volatile Organic Constituent (VOC) headspace surveys of the samples indicated an affected area at 3'bgs of 2,081 ft<sup>2</sup> and extended 40' north, 30' east, 18' west, and 20' south. The trenches were deepened to 16'bgs sampled and surveyed. At 16'bgs an affected area of 9,082 ft<sup>2</sup> was identified to be affected, i.e., 76' north, 50' east, 60' west, and 30' south. A site delineation map is included in Attachment I. Selected samples analyzed for TPH<sup>8015m</sup> and BTEX by Cardinal Laboratories in Hobbs, New Mexico were below instrument detection limits and attest to the volatility of the source term. It also suggests that the VOC headspace readings collected well away from the leak origin clamp during the subsurface delineation were actually due to vapor phase hydrocarbon in the pore space that is dissipating from the liquid phase atop the ground water rather than having been inundated by the condensate liquid similar to the soil beneath the leak origin where the contaminants were adsorbed to the soil. The vapor pressure of the condensate has not been determined. Analyses of hydrocarbon contaminated soil samples from the leak origin did not indicate that sulfate or chloride will be issues at this site.

In February 2003, Environmental Plus, Inc. (EPI), with direction and supervision from Duke Energy Field Services, implemented the <u>Duke NMG-148 C-Line Site Characterization and Soil Remediation Proposal</u>, <u>January 2003</u>. The site characterization information and soil remediation strategies presented in the document should be referenced as a part of this closure proposal. The January 2003 remediation proposal
was approved on February 4, 2003 by Mr. William C. Olson, New Mexico Oil Conservation Division (NMOCD) Environmental Bureau Hydrologist with the following stipulations;

- 1. Duke shall take final soil confirmation samples from the bottom and sidewalls of the excavated area for laboratory analysis upon completion of the excavation activities. The samples will be obtained and analyzed for concentrations of benzene, toluene, ethylbenzene and xylene (BTEX) and total petroleum hydrocarbons (TPH) using EPA approved methods and quality assurance/quality control (QA/QC) procedures.
- 2. Duke shall take final soil confirmation samples for laboratory analysis from every 200 yards of landfarmed soils returned to the excavated area to verify that the soils meet the proposed remediation levels. The samples will be obtained and analyzed for concentrations of BTEX and TPH using EPA approved methods and QA/QC procedures. A field soil vapor headspace measurement of less than 100 ppm may be substituted for a laboratory analysis of BTEX for the purposes of compliance with the proposed BTEX soil remediation limits.
- 3. Duke shall submit a soil remediation report upon completion of the remedial activities. The report shall be submitted to the OCD Santa Fe Office with a copy provided to the OCD Hobbs District Office and shall include:
  - a. A description of the investigation and remediation activities which occurred including conclusions and recommendations.
  - b. Maps showing the locations of all pipelines, excavated areas, landfarmed areas, sample locations and release areas as well as any other pertinent features.
  - c. Summary tables of all soil sampling results and copies of all laboratory analytical data sheets and associated QA/QC data.
  - d. Photographs of the various phases of the remedial activities.
  - e. The disposition of all wastes generated.
  - f. Any other relevant information generated during implementation of the work plans.
- 4. Duke shall notify the OCD at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples.

From February to March 2003, soil contaminated above the NMOCD CoC remedial goals was excavated and shredded to aerate and separate the landfarmable soil from the rock. Volatile Organic Constituent (VOC) headspace survey monitoring was conducted with a calibrated Photoionization Detector (PID) and confirmed with laboratory analyses. The soil and rock were stockpiled on site. The more contaminated soil was spread into a 6" thick lift east of the excavation, tilled weekly, and monitored. Duke received "Right of Entry" permit #707 from the New Mexico State Land Commissioner and allowed for landspreading of contaminated soil for remediation purposes.

In a letter dated October 7, 2004, the NMOCD approved the <u>Duke NMG-148C Line Soil Remediation</u> <u>Status and Closure Proposal, January 2004</u>, with similar soil stipulations and is included in Attachment VI. In October 2004, the closure proposal was implemented consistent with the NMOCD stipulations. The field surveys and laboratory results for all samples from the excavation sidewalls and every 200 yd<sup>3</sup> batch of backfill material surveyed in the field and analyzed in the laboratory were less than the CoC remedial goals and were deemed acceptable. This report documents the implementation of the approved plans consistent with the NMOCD stipulations and provides specific soil analytical information supporting closure of the soil issues at this site justifying a "no further action required" declaration by the NMOCD.

## 2.0 SOIL REMEDIATION

Beginning in February 2003, approximately 18,156 cubic yards (yd<sup>3</sup>) of soil was excavated, shredded, i.e., rock and soil separated, and aerated. Because the excavation exceeded 20'bgs, a site specific excavation safety plan was developed and approved by a Professional Engineer registered in New Mexico. The volatility of the hydrocarbon source term, breezy days, and the warm daytime temperatures during the project contributed to the attenuation of the soil to acceptable levels. With approval from the NMOCD and the New Mexico State Land Office, soil was landspread in an area east of excavation with the segregated soil and rock stockpiled to the north. A 4-wire barbed wire fence with lockable entrance gate secured(s) the site. Photographs are attached.

With approval from the NMOCD, a landspread area, i.e., 350' x 100', for the more contaminated soil, was established east of the excavation inside of the secured area boundary fence. Approximately 1,500 yd<sup>3</sup> of soil was spread and disked at 2 week intervals until attenuated to below the NMOCD remedial goals.

The remaining shredded soil and rock were stored in segregated stockpiles north of the excavation. Testing before and after the shredding process indicated the soil had been adequately remediated and did not require landspreading.

## 3.0 CLOSURE PLAN IMPLEMENTATION DOCUMENTATION

Consistent with the conditions set forth by the NMOCD in February 2003, Duke obtained laboratory samples of the sides of the excavation to confirm achievement of the NMOCD remedial goals for the CoCs, i.e., TPH<sup>8015m</sup>, benzene, and BTEX. Groundwater precluded a bottom sample. All sampling was conducted in accordance with the EPI Standard Operating Procedures and Quality Assurance/Quality Control Plan. The backfilling process monitored soil Volatile Organic Constituents Headspace (VOCH) of every 200 yd<sup>3</sup> of soil as it was being emplaced. The VOCH survey data is being submitted "in lieu" of laboratory benzene and BTEX analyses. Prior to surveying the excavation sidewall and backfill samples for organic vapors, the laboratory samples were jarred and refrigerated. The laboratory reports are provided and summarized in Attachment IV.

A photographic chronolog of the project is provided in Attachment II.

Five-point composite samples were collected from each sidewall in the 28 foot deep excavation on October 22, 2004 from the following vertical locations;

- Center of the sidewall at approximately 14 feet below ground surface ('bgs)
- Lower left quadrant at approximately 20'bgs
- Lower right quadrant at approximately 20'bgs

- Upper left quadrant at approximately 8'bgs
- Upper right quadrant at approximately 8'bgs

The 5-point samples were collected into a clean Ziplock<sup>®</sup> bag, gently blended and the laboratory sample jarred and refrigerated. The remaining bagged sample was allowed to equilibrate to approximately 70°F and the VOCH measured and recorded.

All samples collected were less than 100 ppm VOCH and deemed acceptable.

Laboratory results from all samples were less than the 100 mg/Kg TPH<sup>8015m</sup> remedial goal and deemed acceptable.

Discrete samples of each 200 yd<sup>3</sup> batch of soil were collected, allowed to equilibrate to approximately 70°F, and the VOCH measured and recorded. The VOCH will be submitted to the NMOCD "in-lieu" of laboratory benzene and BTEX analyses. The laboratory analytical reports are included and summarized in Attachment IV.

All samples collected were less than 100 ppm VOCH and deemed acceptable

Laboratory results from all samples were less than the 100 mg/Kg TPH<sup>8015m</sup> remedial goal and deemed acceptable.

Backfilling begin with emplacement of the rock in the bottom of the excavation and overlayed with the soil. The front-end loaders spread and compacted the matrix in approximately 1-foot thick lifts. After the excavation was backfilled, the clean topsoil stockpiled on site was spread over the area and contoured to grade.

4.0 CLOSURE JUSTIFICATION

This report documents the implementation of the approved plan consistent with the NMOCD stipulations and provides specific soil analytical information supporting closure of the soil issues at this site justifying a "no further action required" declaration by the NMOCD. The final form C-141 is included in Attachment VII.

## 5.0 FOLLOW-UP

The site will be reseeded in the spring of 2005 with a seed blend acceptable to the New Mexico State Land Office.

Puke Energy. Field Services



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Duke Energy.
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NMG-148C RELEASE Soil Remediation Closure Documentation December 2004



NMG-148C RELEASE SOIL REMEDIATION CLOSURE DOCUMENTATION December 2004

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	Incident [	Date and NMOCD Notified?	
Duke Energy Field Services Site			11-4-1-
Information and Metrics	12-23-02	NMOCD notified imm	legiately
SITE: NMG-148 C-Line		Assigned Site Reference #:	
Company: Duke Energy Field Services		······································	
Street Address: 11525 West Carlsbad Hi			
Mailing Address: 11525 West Carlsbad H	lighway		
City, State, Zip: Hobbs, NM 88240			
Representative: Paul Mulkey/Stan Shaver/			
Representative Telephone: 505.397.571	6 / 505.397.55	61	
Telephone:			
Fluid volume released (bbls): >25 bbls		Recovered (bbls): 0	
>25 bbls: Notif	fy NMOCD verbal	ly within 24 hrs and submit form C-141 wit	thin 15 days.
	Also applies to una	uthorized releases >500 mcf Natural Gas)	
5-25 bbls: Submit form C-	141 within 15 days	(Also applies to unauthorized releases of 5	0-500 mcf Natural Gas)
Leak, Spill, or Pit (LSP) Name: NMG-14			
Source of contamination: Natural Gas Ga			
Land Owner, i.e., BLM, ST, Fee, Other:: S	otate of New M	exico leased by Foley	
LSP Dimensions ~95' x 40'			
LSP Area: 2,536 ft <sup>2</sup>			
Location of Reference Point (RP)			
Location distance and direction from RP			
Latitude: 32 ° 39 ' 21 . 32 " N			
Longitude: 103°15'32.90"W			
Elevation above mean sea level: 3,648	'amsl		
Feet from South Section Line			
Feet from West Section Line			
Location- Unit or 1/4 1/4: SE1/4 of the SW	1/4	Unit Letter: N	
Location-Section: 16			
Location- Township: 19S			
Location- Range: 37E			
Surface water body within 1000 ' radius of	f site: None		
Domestic water wells within 1000' radius	of site: None		
Agricultural water wells within 1000' radiu	is of site: Non	e	
Public water supply wells within 1000' rad			THE BALL
Depth from land surface to ground water			
Depth of contamination (DC) –			
Depth to ground water (DG – DC = DtC	<del>W) - 0.0</del>		
		· · · ·	
If Depth to GW <50 feet: 20 points	If < 1000' fr	om water source, or;<200' from	<200 horizontal feet: 20 points
If Depth to GW 50 to 99 feet: 10 points		estic water source: 20 points	200-100 horizontal feet: <i>10 points</i>
		om water source, or; >200' from	
If Depth to GW >100 feet: 0 points		estic water source: 0 points	>1000 horizontal feet: 0 points
Ground water Score = $20$		tection Area Score= 0	Surface Water Score= 0
Site Rank $(1+2+3) = 20$	weinitau F10		
	Concentration		
Total Site Ranking Score and Acceptable			
Parameter		10-19 (surface to 43'bgs)	0-9
Benzene <sup>1</sup>		10 ppm	10 ppm
BTEX1		50 ppm	50 ppm
ТРН		1000 ppm	5000 ppm
<sup>1</sup> 100 ppm field VOC headspace measurem	nent may be su	bstituted for lab analysis	

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Duke Energy Field Services

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Sample Description	SAMPLE ID#	Sample Date	Lithology	HEADSPACE VOC <sup>2</sup> (ppm)	GRO <sup>3</sup> mg/Kg	DRO <sup>4</sup> mg/Kg	TPH <sup>5</sup> (8015M.) mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtyl Benzene mg/Kg	Total Xylenes mg/Kg
Backfill	SDNMG1	10/14/2004	Caliche	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG2	10/14/2004	Caliche	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG3	10/14/2004	Caliche	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG4	10/15/2004	Caliche	0.0	0.08	nd	0.08	na	na	na	na	na
Backfill	SDNMG5	10/15/2004	Caliche	0.1	0.20	nd	0.20	na	na	na	na	na
Backfill	SDNMG6	10/15/2004	Caliche	0.6	0.14	nd	0.14	na	na	na	na	na
Backfill	SDNMG7	10/15/2004	Caliche	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG8	10/15/2004	Caliche	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG9	10/15/2004	Caliche	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10	10/15/2004	Caliche	0.4	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG11	10/18/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG12	10/18/2004	Caliche Sand	0.9	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG13	10/18/2004	Caliche Sand	1.2	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG14	10/18/2004	Caliche Sand	0.5	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG15	10/18/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG16	10/18/2004	Caliche Sand	1.5	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG17	10/19/2004	Caliche Sand	0.3	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG18	10/19/2004	Caliche Sand	0.2	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG19	10/19/2004	Caliche Sand	0.9	0.36	nd	0.36	na	na	na	na	na
Backfill	SDNMG20	10/19/2004	Caliche Sand	0.7	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG21	10/19/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG22	10/20/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG23	10/20/2004	Caliche Sand	0.9	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG24	10/20/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG25	10/20/2004	Caliche Sand	0.7	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG26	10/20/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
	New Mexic	co Oil Conservation	Division Remedial Goals	100.0			100.00	50.000	10			

<sup>1</sup>bgs – below ground surface

<sup>2</sup>VOC-Volatile Organic Contaminants/Constituents

<sup>3</sup>GRO-Gasoline Range Organics (C<sub>6</sub>-C<sub>10</sub>)

<sup>4</sup>DRO-Diesel Range Organics (>C<sub>10</sub>-C<sub>28</sub>)

<sup>5</sup>TPH(8015 Mod.)-Total Petroleum Hydrocarbon = GRO+DRO.

Laboratory analyses were performed by Assaigai Laboratories of Albuquerque, New Mexico

 $^{7}\text{nd}$  - not detected above the instrument detection limit.

<sup>8</sup>na - Not Analyzed

Duke Energy. Field Services

Sample Description	SAMPLE ID#	Sample Date	Lithology	HEADSPACE VOC <sup>2</sup> (ppm)	GRO <sup>3</sup> mg/Kg	DRO <sup>4</sup> mg/Kg	TPH <sup>5</sup> (8015M.) mg/Kg	BTEX mg/Kg	Benzene mg/Kg	Toluene mg/Kg	Ehtyl Benzene mg/Kg	Total Xylenes mg/Kg
Backfill	SDNMG27	10/21/2004	Caliche Sand	0.7	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG28	10/21/2004	Caliche Sand	0.2	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG29	10/21/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG30	10/21/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG31	10/21/2004	Caliche Sand	0.0	nd	nd	nđ	na	na	na	na	na
Backfill	SDNMG32	10/21/2004	Caliche Sand	0.5	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG33	10/22/2004	Caliche Sand	0.3	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG34	10/22/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG35	10/22/2004	Caliche Sand	0.3	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG36	10/22/2004	Caliche Sand	0.0	nd	51.00	51.00	na	na	na	na	na
Backfill	SDNMG37	10/22/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG38	10/22/2004	Caliche Sand	0.3	nd	nd	nd	na	na	na	na	na
East Sidewall	SDNMG39 NSWC	10/22/2004	Caliche	4.6	nd	nd	nd	na	na	na	na	na
West Sidewall	SDNMG40 WSWC	10/22/2004	Caliche	6.0	nd	nd	nd	na	na	na	na	na
North Sidewall	SDNMG41 NSWC	10/22/2004	Caliche	3.6	nd	nd	nd	na	na	na	na	na
South Sidewall	SDNMG42 SSWC	10/22/2004	Caliche	5.8	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250443	10/25/2004	Caliche Sand	1.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250444	10/25/2004	Caliche Sand	0.9	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250445	10/25/2004	Caliche Sand	0.4	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250446	10/25/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250447	10/25/2004	Caliche Sand	0.0	nd	nd	nd	na	na	na	na	na
Backfill	SDNMG10250448	10/25/2004	Caliche Sand	0.1	nd	nd	nd	na	na	na	na	na
	New Mexico	Oil Conservati	on Division Remedial Goals	100.0			100.00	50.000	10			

<sup>1</sup>bgs – below ground surface

<sup>2</sup>VOC–Volatile Organic Contaminants/Constituents

<sup>3</sup>GRO-Gasoline Range Organics (C<sub>6</sub>-C<sub>10</sub>)

<sup>4</sup>DRO-Diesel Range Organics (>C10-C28)

<sup>5</sup>TPH(8015 Mod.)-Total Petroleum Hydrocarbon = GRO+DRO.

Laboratory analyses were performed by Assaigai Laboratories of Albuquerque, New Mexico

 $^{7}\text{nd}$  - not detected above the instrument detection limit.

<sup>8</sup>na - Not Analyzed

Duke Energy. Field Services

Sample Description         SAMPLE ID#         Sample Date         Lithology         VOC <sup>2</sup> (ppm)         GRO <sup>+</sup> mg/Kg         DRO <sup>+</sup> mg/Kg         BaleX         Benzere mg/Kg         Iougres mg/Kg         Iougres mg/Kg									· · · ·				
Backfill         SDNMG10260450         10/26/2004         Caliche Sand         0.7         nd         nd         nd         na         na         na           Backfill         SDNMG10260451         10/26/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10260452         10/26/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10260451         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270455         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270457         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na	Ehtyl Tota Benzene Xylen mg/Kg mg/H	Benze				(8015M.)			VOC <sup>2</sup>	Lithology	Sample Date	SAMPLE ID#	Sample Description
Backfill         SDNMG10260451         10/26/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	па	nd	nd	nd	3.7	Caliche Sand	10/26/2004	SDNMG10260449	Backfill
Backfill         SDNMG10260452         10/26/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10260453         10/26/2004         Caliche Sand         0.7         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.7	Caliche Sand	10/26/2004	SDNMG10260450	Backfill
Backfill         SDNMG10260453         10/26/2004         Caliche Sand         0.7         nd         nd         nd         na         na         na           Backfill         SDNMG10270454         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10270455         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10270456         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270456         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10270458         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10280462         10/28/2004	na na	na	na	na	na	nd	nd	nd	0.0	Caliche Sand	10/26/2004	SDNMG10260451	Backfill
Backfill         SDNMG10270454         10/27/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10270455         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270456         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         <	na na	na	na	na	па	nd	nd	nd	0.0	Caliche Sand	10/26/2004	SDNMG10260452	Backfill
Backfill         SDNMG10270455         10/27/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10270456         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.7	Caliche Sand	10/26/2004	SDNMG10260453	Backfill
Backfill         SDNMG10270456         10/27/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10270457         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270458         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270459         10/27/2004         Caliche Sand         2.9         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280460         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.0	Caliche Sand	10/27/2004	SDNMG10270454	Backfill
Backfill         SDNMG10270457         10/27/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10270458         10/27/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10270459         10/27/2004         Caliche Sand         2.9         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280460         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280462         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.0	Caliche Sand	10/27/2004	SDNMG10270455	Backfill
Backfill         SDNMG10270458         10/27/2004         Caliche Sand         0.0         nd         nd         na         na         na           Backfill         SDNMG10270459         10/27/2004         Caliche Sand         2.9         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280460         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.0	Caliche Sand	10/27/2004	SDNMG10270456	Backfill
Backfill         SDNMG10270459         10/27/2004         Caliche Sand         2.9         nd         nd         na         na         na           Backfill         SDNMG10280460         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na         na         na         na           Backfill         SDNMG10280461         10/28/2004         Caliche Sand         0.0         nd         nd         nd         na	na na	na	na	na	na	nd	nd	nd	0.0	Caliche Sand	10/27/2004	SDNMG10270457	Backfill
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	na na	na	na	na	na	nd	nd	nd	0.3	Brown Clay Loam	11/1/2004		
Backfill         SDNMG11010473         11/1/2004         Brown Clay Loam         0.0         nd         nd         na         na           New Mexico Oil Conservation Division Remedial Goals         100.0         100.00         50.000         10	na na	na	na		na	nd	nd	nd	0.0	Brown Clay Loam	11/1/2004	SDNMG11010473	Backfill

<sup>1</sup>bgs – below ground surface

<sup>2</sup>VOC-Volatile Organic Contaminants/Constituents

<sup>3</sup>GRO-Gasoline Range Organics (C<sub>6</sub>-C<sub>10</sub>)

<sup>4</sup>DRO-Diesel Range Organics (>C<sub>10</sub>-C<sub>28</sub>)

<sup>5</sup>TPH(8015 Mod.)-Total Petroleum Hydrocarbon = GRO+DRO.

Laboratory analyses were performed by Assaigai Laboratories of Albuquerque, New Mexico

 $^{7}\text{nd}$  - not detected above the instrument detection limit.

<sup>8</sup>na - Not Analyzed

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ASSAIGAI		
ANALYTICAL		
LABORATORIES,	INC.	

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4301 Masthead NE + Albuquerque, New Mexico 87109 + (505) 345-8964 + FAX (505) 345-7259

3332 Wedgewood, Ste. N • El Paso, Texas 79925 • (915) 593-6000 • FAX (915) 593-7820 127 Eastgate Drive, 212-C • Los Alamos, New Mexico 87544 • (505) 662-2558

			,,,,,,,,   		Explanation of codes	
			Î	3	ensiyte datected in Method Blank	
			E	Ę į	result is estimated	i i
ENVIRONMENTAL PLUS,	INC.		ł	1	analyzed out of hold time	j
attn: PAT McCASLAND			ħ	ł	tentelively identified compound	
P.O. BOX 1558			\$	3	subcontracted	1
EUNICE	NM	88231	1	9	see footnote	Ĵ

STANDARD

#### Assaigal Analytical Laboratories, Inc. **Certificate of Analysis**

Client: Project:		/IRONMEN G 148	TAL PLUS, I	NĊ.		6	*	$\bigcirc$			
Order:	041	0577 E	INVO3	Receipt: 10-26-04	Widow (	Flagther	Control of Assaug	ai Analyscal Lab	averances, in	, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
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QC Group		Run Sequer	ice CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Dato	Run Date
0410577-0	ATA		SW846 50	35B/8015B, GRO by GC/FID				By:	TRS		
X041397		XG 2004 1909	.8	Gasoline Range Organics	ND	mg / Kg	1	0.05		10-28-04	10-28-04
0410577-0	ATA		SW846 80	156 Diesel Range Organics b	GC/FID			By:	MDE		
X041403		XG 2004, 1922		Diesel Range Organics	ND	mg / Kg	1	25		10-29-04	10-29-04
Sample	sol	NMG2	www."wissoniv Morth His Sinc	an i an	Collected: 10-14	1-04 12:25:	X By:	MB			
Matrix:	c										
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QC Group	p	Run Sequer	ice CAS#	Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-0	02A		SW846 50	35B/6015B GRO by GC/FID				By:	TRS		
X04 135/7		XG,2004,1903	framework and the second	Gasoline Range Organics	. ND	mg / Kg	1	0.05	·	10-28-04	10-28-04
0410577-6	02A		SW846 80	15B Diesel Range Organics b	GC/FID			By:	MDE		
X041403		XG 2004 1922		Diesel Range Organics	ND	mg / Kg	1	25		10-29-04	10-29-04
Sample: Matrix:	SDI C	NMG3	nyelyesyye (***********************************	a ar eithigh ghan a' th' f Ars grapping y an yn amerikaan ar	Collected: 10-14	1-04 14:00	20 By:	MB	aaaaan kar oo in gaarin		aan ahaa yo wee heessa soo
QC Group		Run Sequer	ice CAS #	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
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0410577-0	03A.		a anno ingeorgean ag	35B/8015B GRO by GC/FID				By:	TRS		
X041397		XG.2004.1903	.11	Gasoline Range Organics	ND	mg / Kg	<b>1</b>	0.05		10-28-04	10-28-04
Page 1 of	11	,, <b>k</b> uu uug		SQLCoyote: Reports f DUCTION OF THIS REPORT IN LESS THAN THAT NOT BE USED IN ANY MANNER B				Report Da	tə 11/	2/2004 5:	33:55 PM

#### Assaigal Analytical Laboratories, inc. Certificate of Analysis

Client:		/IRONME	NTA	l Plus, I	NC.								
Project:		G 148			<b></b>								
Order:	041	0577	ENV	03	Receipt:	10-26-04							
Sample	SD	VMG3	************	w			Collected: 10-14	4-04 14:00:1	20 By:	ne			
Matrix	С												
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QC Group		Run Sequ	ence	CAS #		Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-03	3A			SW846 80	158 Diese	Range Organics	by GC/FID			By:	MDE		
X041403		XG.2004.19	22.9		Dies	el Range Organics	ND	mg / Kg	1	25	: 	16-29-04	10-29-04
Sample:	SD	NMG4					Collected: 10-1	5-04 8:30:04	) By: .	MB	**************************************	• • • • • • • • • • • • • • • • • • • •	
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					····	- 994 (		······································	Dilution	Detection		Prep	Run
QC Group		Run Sequ	ence	CAS #	**** * * * * *	Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-04	44			SW846 50	358/80158	GRO by GC/FID				By:	TRS		
X041397		XG 2004,19	03.1Z		uudy 200000 mooraa aaaaa mir ees	ine Range Organic	s 0,078	mg / Kg	1	0.05		10-28-04	10-28-04
0410577-04	44			SW846 80	158 Diese	Range Organics	by GC/FID			By:	MDE		
X041403		XG.2004.19	22.10	And an and an and an and an	Dies	el Range Organics	ND	mg/Kg	1	25		10-29-04	10-29-04
Sample:	SD	VMG5					Collected: 10-1	5-04 9:15:00	) By:	MB			d
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0410577-01 X041397	5 <b>A</b>	XG 2004.19	83.13	5W846 50		GRO by GC/FID ine Range Organic	s 0.20	mg / Kg	1	By;	TRS	10-28-04	10-28-04
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Sample:		VMG6					Collected: 10-1	5-04 9:40:00	) By: (	MB			
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									Dilution	Detection		Prep	Run
QC Group		Run Sequ	ence	CAS #		Analyte	Rosult	Units	Factor	Limit	Code	Date	Date
0410577-0	6A			SW846 50	35B/8015B	GRO by GC/FID				By:	TRS		
X041397		XG.2004.19	03,16		Gaso	ine Range Organio	s 0.14	mg / Kg	1	0,05		10-28-04	10-28-04
0410577-00	6A			SW846 80	158 Diesel	Range Organics I	by GC/FID			By:	MDE		
X041403		XG.2004.19	22.12	\$	Dies	el Range Organics	NÖ	mg / Kg	1	25		10-29-04	10-29-04
Sample:	SO	VMG7			9995.6 - <u>ao</u> nto onanana		Collected: 10-15	5-04 10:15:0	10 By: 1	MB			
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QC Group		Run Sequ	ones	C10.4		Amahata	19	1.8		Detection	<b>*</b> **	Prep	Run
		nuns ondin	89 X 675	CAS#	• •• • • • •	Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-07	7A			SW846 50		GRO by GC/FID		·····	errerine generality	By:	TRS		
X041397		XG.2004.191	03.17	) 	Gasod	ne Range Organic	s ND	mg / Kg	<b>1</b>	0.05		10-28-04	10-28-04
Anna Anna										·····			
Page 2 of	77				SQLCo	yale: Reports	1,1,0410200836XX			Report Dal	e 11/2	12004 5:	33:55 PM

Assaigai Analytical Laboratories, Inc. Certificate of Analysis

Client: ENVIRONMENTA Project: NMG 148				PLUS, INC.										
Order:	041	0577	ENV	03 Rec	ceipt:	10-26-04								
Sample:	sn	NMG7				4.4.4	Collected	: 10-1	5-04 10 15:0	NO By: A	<b>N</b> 8			
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0410577-0	178			CHARLES BOLLER	Diessi	Range Organics	by GC/FID				By:	MDE		
X041409	51 <b>m</b>	XG 2004.16	K22.18			Range Organica	· · · · · · · · · · · · · · · · · · ·	<b>4D</b>	mg / Kg	1	25		10-29-04	10-29-04
Sample:	60	A188/~0			······		Collected	10-1	5-04 12:10:1	10 By: /	WB	1996 S		
Matrix:	C	NMG8					*******							
QC Group	e) (04 <b>0 6 6</b>	Run Sequ	lence	CAS#		Analyte	Re	oult	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-0	15 A.			CHARLE EASER	MASA	GRO by GC/FID					By:	TRS		
X041397	26744	XG 2004.19	103.18	SHAA AATAM	-5100 - 110 / 9460pt	te Range Organic	s I	QV	mg / Kg	1	0.05		10-28-04	10-28-04
0410577-0	ABA			SW846 80158	Diesel	Range Organics	by GC/FID				By:	MDE		
X041403		XG 2004.18	122.18		ropen an	I Range Organics	****	ND OF	mg / Kg	<b>1</b>	25		10-29-04	10-29-04
Sample: Matrix:	SD C	NMG9					Collected	: 10-1	5-04 13:45.1	90° Ву: И	B			
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0410577-0	NOA.			SWRAG GO35B	RO15R	GRO by GC/FID					By:	TRS		
X041387	****	XG.2004.19	905.19			ne Range Organic	\$	ND.	mg / Kg	1	0.05	eiler is slattis Mail-	10-28-04	10-29-04
0410577-0	09A			SW846 80158	Diesel	Range Organics	by GC/FID				By:	MDE		
X041403		XG.2004.16	922.17		Diese	I Range Organics		ND.	mg / Kg	1	25	í	10-29-04	10-29-04
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QC Grou	P	Run Sequ	UONCO	CAS #		Analyte	R	isult	Units	Dilution Factor	Detection	Code	Prep Date	Run Date
0410577-	10A		*** **	SW846 60358		GRO by GC/FID				· ·	By:	TRS	10-28-04	10-28-04
XD4 1397		XG 2004. 1	903.20		natari wakatana a	ne Range Organic	1721 - Ly - 5 - Li - Li - Li	ND	mg / Kg	<u> </u>	. 0,05		10-20-04	10-20-04
0410577- X041403	10A	XG.2004.1	577 ta	SW846 8015B	education descention and us	Range Organics I Range Organics		ND	mg / Kg	1	By: 25	MDE	10-29-04	10-29-04
ALP4 1400		2563-4524-7			URDE	a realitie Critallica		·····	ing rog			8 ., .,		
Sample: Matrix	SD C	NMG11	n gada want nan s	encon v Visionska kalendorana v V			Collected	t 10-1	8-04 8:00:0	0 By:	M8			
QC Grou	<b>p</b>	Run Seqi	uence	CAS#	×	Analyte	R	suit	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-	<b>1</b> 1A			SW846 5035B	(8015B	GRO by GC/FID					By:	TRS		
X041397		XG.2004.1	803.21	·····	Gasol	ne Range Organic	*	ND	rng / Kg	f	0.05		10-28-04	10-28-04
Page 3 of	F 11				SOLCO	rote: Reports	1.1.041020				Report Da	(p 11/	2/2004 5:	33:55 PM

Assaigai Analytical Laboratories, Inc. Certificate of Analysis

Client:			ENTAL	. PLUS, II	NC.									
Project: Order:		G 148 0577	ENV	03	Receipt:	10-26-04								
Sample:	en	NMG11				- ALLANDER OF COMPANY CONTRACTOR	õ	elected: 10-12	1-04 8:00:00	) By: J	VB			
Matrix:	C	1414FN# F 1												
QC Group		Run Sequ	lence	CAS #		Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-1	14			SW846 801	158 Diese	I Range Organ	nics by G4	CIFID			By.	MDE		
X041403	•••	XG.2004.19	22,19		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	sel Range Orga		ND	mg / Kg	ţ	25		10-29-04	10-29-04
Semple: Matrix	SD C	NMG12			*****		Q	oliected: 10-10	9-04 9:20:00	) By: I				
QC Group	۱ <u>, .</u> ,	Run Seq	Jetice	CAS #		Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Data	Run Oate
0410577-1	2Å			SW846 50	158/80158	GRO by GC/	FID				By:	TRS		
X041397		XG.2004.11	63.22			iline Range Org		ND	mg / Kg	1	0.05		10-28-04	10-28-04
0410577-1	2A			SW845 80	158 Diese	I Range Orgar	ilcs by G	C/FID			By:	MDE		
X041403		XG.2004.11	922.20		Dis	sel Range Orga	inics	ND	mg / Kg	1	25		10-29-04	10-29-04
Sample: Matrix:	SD C	NMG13					0	oliected: 10-11	8-04 10:45.1	00 By <u>r</u> (	<b>KB</b>			
QC Group	• • • • • •	Run Seq	lence	CAS #	. •	Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-1	3A			SW846 50	358/80158	GRO by GC/	FID				By:	TRS		
X041397		XG.2004.11	903.23	·	Gase	line Range Org	janics	ND	mg / Kg	1	0.05	<u>.</u>	10-26-04	10-28-04
0410577-1	3A			SW846 80		il Range Orgar		CIFID	· · · · · · · · · · · · · · · · · · ·		By:	MDE		
X041403		XG.2004.11	122.21		Die	sel Range Orga	inics	ND	mg / Kg	1	25		10-29-04	10-29-04
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QC Group	• •	Run Seq	Jence	CAS #		Analyte		Result	Ųnilis	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-1	4A			SW848 50	15B/8015E	GRO by GCA	FID				By:	TRS		
X041397		XG.2004.1	903.24	: : :	Gase	line Range Org	panics	ND	mg / Kg	1	0.05		10-28-04	10-28-04
0410577-1 X041403	4A	XG 2004-1	122.22	SW846 80		al Range Organ sel Range Orga	en es consens se Frances	C/FID ND	mg / Kg	1	By: 25	MDE	10-29-04	10-29-04
Sample:	sn	NMG15					G	oliected: 10-16	8-04 12:40	00 By: /	MG			
Matrix:	¢	1446075					-							
QC Group	•	Run Seqi	Jence	CAS #		Analyte	· ·	Rosult	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-1	5A			SW846 50	35B/8015E	GRO by GC/I	FID				By	TRS		
X041402		XG 2004.1	M3.6		ومعمولية ترتين ومست محمد ومعا	sine Range Org		ND	mg / Kg	1	0.25		10-29-04	10-29-04
Page 4 of	11				SQLC	oyote: Reports	1.1.4	410200836XX		<u></u>	Report Da	e 11/2	2/2004 5:	33:55 PM

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STANDARD

Assalgai Analytical Laboratories, Inc. Certificate of Analysis

			ENTAL	PLUS, IN	IC.									
	NMC 0410	3 148 1577	ENV	03	Receipt:	10-26-04								
AMPAGA		www.g.cov -15*****			undanar en		Collected	10.18	-04 12:40:0	10 By: 1				
	SDN C	MG15						1 <b>4</b> -7 <b>4</b>						
	¥			CAS #		Analyte	Ren	usit	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
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0410577-15 X041403	ia.	XG.2004.11	197 <b>5</b> 8	SW845 801	الاستادا المقامير معاردت والدي	il Range Organic sel Range Organic	an a	n	mg / Kg	1	8y: 25	MDE	10-29-04	10-29-04
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QC Group		Run Sequ	Jence	Cas #		Analyto	Rec	ult	Units	Dilution Factor	Oetection Limit	Code	Prep Date	Run Date
0410577-16	ia.			SW846 503	58/80156	GRO by GC/FID	)				By:	TRS		
X041402		XG,2004.1	913.9		Gase	tine Range Organ	ica N	D	mg / Kg	1	0.25		10-29-04	10-29-04
0410577-16	5A			SW846 801	5B Diese	Range Organic	s by GC/FID				By:	MOE		
X041403		XG.2004.11	922.24	·	Die	sel Range Organi	25 N	D	mg / Kg	1	25	5 	10-29-04	10-29-04
Sample: Matrix	SDN C	iMG17				an man jugang a sa kara metar in in	Collected:	10-19	-04 8:16:00	) By: /	M8		18484	
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QC Group		Run Seq	uence	CAS ¢		Analyte	Rø	iult	Units	Factor	Limit	Code	Date	Date
0410577-17	7A			SW846 503	15B/8015E	GRO by GC/FIL	)			and in these are	By.	TRS		
X041402		XG,2004.1	813, 10	***	Gase	oline Range Organ	N N	D	mg / Kg	<b>1</b>	0.25		10-29-04	10-29-04
0410577-17	7A			SW846 801	21	I Range Organic	20102010010010000000000000000000000000				By:	MOE		
X041403		XG.2004.11	922,27	} 	Die	sel Range Organi	CB N	D	mg / Kg	1	25		10-29-04	10-29-04
Sample: Matrix:	SDA C	IMG18					Collected:	10-15	04 9:38:00	) By: (	MB			
										Dilution			Prep	Run
QC Group	۰. ·	Run Seq	uence	CAS #		Analyto	Re		Units	Factor	Limit	Code	Date	Date
0410577-16	BA			SW846 503	in comparison of	GRO by GC/FIL					By:	TRS		
X041402		XG.2004.1	913.11		Gası	oline Range Organ	lics N	D	mg / Kg	1	0.25	3 	10-29-04	10-29-04
0410577-18	BA			SW846 801		A Range Organic	constraint a communitie				By:	MOE		
X041403		XG.2X04.1	922.28		Die	sel Range Organi	<u>cs N</u>	D	mg / Kg	1	25	:	10-29-04	10-29-04
Sample:	SDA	IMG19	· · · · · ·				Collected:	10-11	7-04 11:20.0	00 By:	MB	c		
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QC Group	4471	Run Seq	act3	CAS #	· ·	Analyte	Re	*****	Units	Factor	Limit		Date	
0410677-19 X041402	9A	XG.2004.1	913.12	5W846 503	провели и неперього с	3 GRO by GC/FIL pline Range Organ	anana in aranganinina arang	8	mg / Kg	1	By: 0.25	TRS	10-29-04	10-29-04
Page 5 of						cyols: Reports	1.1.0410200				Report Da		8 MAA 3 T	33:55 PM

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#### Assaigai Analytical Laboratoriles, Inc. Certificate of Analysis

Client:			ENTA	L PLUS, I	NC.									
Project: Order:		G 148 0577	ENV	กา	Receipt:	10-26-04								
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Sample:	SD	NMG19				•	Collected	10-19-1	04 11:20:0	X) By: 1	AB			
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QC Group		Run Sequ	ience	CAS #		Analyte	Res	uit	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-19	9A			SW846 80	158 Diese	Range Organics b	w GC/FID				By:	MDE		
X041403		XG 2004.1	22,29		والمستقدة بمنصح مرور محادثهما المروا	el Range Organics	Ň	D	mg / Kg	1	25		10-29-04	10-29-04
Sample:	<b>e</b> n	NMG20					Collected:	10-19-	04 13:301	X) Bv: /	NA	ana niniininnan t	n ( ang an a sa a sa a	
Matrix:	Ċ	WING220												
QC Group	en vit ded vit	Run Sequ	Jence	CAS #		Analyte	Res		Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
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0410577-20 X041402	DA	XG.2084.11	13.13	SW846 50	all and a second se	GRO by GC/FID line Range Organics	N	n	mg / Kg	1	By: 0.25	TRS	10-29-04	10-29-04
0410577-20						, <del>Terrardi China</del> n					<b>By</b> :	MDE		
X041403	yan	XG.2004.1	K22.30	-244840 BV	******	I Range Organics b el Range Organics	N N	D	ing / Kg	1	25	8 <b>4</b> 3647 far.	10-29-04	10-29-04
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Semple: Matrix:	SD C	NMG21					Collected:	70-19-	04 156123	λγιούγ <sub>ι</sub> τ	NB			
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QC Group		Run Seqi	mina	CAS #		Amažiata	Res	e 189	Units	Dilution Factor	Detection Limit	Code	Prep Date	Rim Date
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0410577-21 X841482	14	XG 2004.11	51 <b>3</b> 66	SW846 50		GRO by GC/FID	N		mg / Kg	1	By: 0.25	TRS	10-29-84	10-29-04
		,			nin in one an an	line Range Organics		····	1197 19	i Anner e Argeneren		4 600 17	10.04.01	
0410577-21 X041454	1A	XG 2004, 11	24.5	SVV846 80		I Range Organics b el Range Organics	N GC/FID	n T	mg / Kg	1	By: 25	MDE	11-01-04	11-01-04
Survey Classification Surveyory					3 <b>,7</b>		······				barra in a state			
Sample:		NMG22					Collected:	10-20-	04,8:16:00	) Bry∷ /	мð			
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QC Group		Run Sequ	ence	CAS #	( <b>4</b> , 1 - 1	Analyte	Res	ult	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-23	2A			SW846 60	358/80168	GRO by GC/FID					By	TRS		
X841402		XG.2004.1	913.16		Gaso	line Range Organics	N N	D	mg / Kg	1	0.25		10-29-04	10-29-04
0410577-22	2A			SW846 80	158 Diese	Range Organics b	y GC/FID				By:	MDE		
X041414		XG.2004-19	924.9		Diet	el Range Organics	N	D	mg / Kg	1	25		11-01-04	11-01-04
Sample:	SD	NMG23					Collected:	10-20-	04 9:38:00	) Byc /	NB			
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0410577-2: X041402	ar.	XG.2004.11	113.17	avv645 50		GRO by GC/FID Ine Range Organics	N	D	mg / Kg	1	By: 0.25	TRS	10-29-04	10-29-04
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Page 6 of	11				SOLO	unte Pennte 1	1 04102008	36XX			Report Dal	s 11/	2/2004 K-	33:65 PM

#### Assaigal Analytical Laboratories, Inc. Certificate of Analysis

Client:	EN	<b>/IRONMI</b>	ENTA	L PLUS, IN	(C.									
Project:	NM	G 148												
Order:	041	0577	ENV	03	Receipt:	10-26-04								
Sample:	\$DI	NMG23		· · · · · · · · · · · · · · · · · · ·			Cólk	cted: 10-2	0-04 9:38:00	i By; J	MB			nnn 14 i Ar / 5 Ar Ar an i Ar Ar
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QC Group		Run Seq	lence	CAS #		Analyte		Result	Units	Factor	Limit	Code	Date	Date
0410577-2	3A			SW846 801	5B Diese	el Range Organic	s by GC/	ălă		معددة المحاجبين	By:	MDE		
X041414		XG.2004.1	924. 10	· · · · · · · · · · · · · · · · · · ·	Die	sel Range Organi	64	ND	mg / Kg	. <b>1</b> 	25		11-01-04	11-01-04
Sample:	SD	NMG24		··· ···· ·····························	s 1		Coli	scied: 10-2	0-04 11:20	00 By:	MB		a	
Matrix	С													
QC Group	,	Run Seq	uence	CAS #		Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
A44677			,,	-	20/064 EC	GRO by GC/Fil	n.				By:	TRS		
0410577-2 X041402	148 <b>.</b> 4	XG.2004.1	913, 18	011040 002		sline Range Organ	meterine e staper	ND	mg / Kg	1	0.25		10-29-04	10-29-04
0410577-2				SWRAR ROA	SR Diosi	I Range Organic	te by GCJ				By:	MDE		
X041414		XG.2004.1	924.11		5	sel Range Organi	······································	ND	mg / Kg	1	25		11-01-04	11-01-04
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QC Group	×	Run Seq	uence	CAS Ø		Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-2	25A			SW846 503	5 <b>B/801</b> 56	GRO by GC/Fil	D				By:	TRS		
X041402		XG 2004 1	913,19	·	Gase	oline Range Orga	nics	ND	mg / Kg	1	0.25		10-29-04	10-29-04
0410677-2	16A			SW848 801	SB Dies	el Range Organic	os by GC/	FID			By:	MDE		
X041414		XG.2004_1	924, 12	·	Die	sel Range Organi		ND	mg / Kg	<b>t</b>	25		11-01-04	11-01-04
Sample:		NMG26		te la craite i la caise con ca	:-	inder consistent and a second	Colk	ected: 10-2	0-04 15:00	00 By:	MB			
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QC Group		Run Seq	uence	CAS ø		Analyte		Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-2	26A			SW846 503	SB/80158	GRO by GC/FI	D	~~~~~			By	TRS		
X041402		XG 2004.1	913,20		Gase	oline Range Orga	nics	ND	mg / Kg	1	0.25		10-29-04	10-29-04
0410577-2	26A			SW846 801	158 Dies	el Range Organic	os by GCA	FID		. 600 mm	By:	MDE		
X041414		XG.2004.1	924.13		Die	sel Range Organi	ics	ND	mg / Kg	•	25	ş Ş	11-01-04	11-01-04
Sample:	SD	NMG27	10-metawaea 11-	1755 metangkana (m	et ter new with the	na stir og som dørter er som er er	Coll	scted: 10-2	1-04 7:30:0	) By:	MB			
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					0-00.00 <sup>-</sup>					Dilution	Detection	1997 - MARINA	Prep	Run
QC Group	2	Run Seq	uence	CAS #	• ···	Analyte		Result	Units	Factor	Limit	Code	Date	Date
0410577-2	27A			SW846 50:		B GRO by GC/FI	energy and a second				By:	TRS		
X041402		XG 2004.1	913.21	{ 	Gas	oline Range Orga	nics	ND	mg/Kg	<u> </u>	0.25	: 	10-29-04	10-29-04
Page 7 of	11				SQLO	oyote: Reports	1.1.041	0200836XX			Report Da	to 11/	2/2004 5:	33:55 PM

### Assaigai Analytical Laboratories, Inc. Certificate of Analysis

Căent:	EN	/IRONMI	ENTAI	L PLUS, IN	<b>C</b> .								
Project:	NM	G 148											
Order:	041	0577	ENV	03 F	leceipt:	10-26-04							
Sample:	SDI	NMG27		10000000000000000000000000000000000000			Collected: 10-2	1-04 7:30:00	) By: /	WB			
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QC Group	2	Run Seq	uence	CAS #		Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-2	17A			SW846 8015		Range Organics				By:	MDE		
X041414		XG.2004.1	924. 16		Dies	el Range Organics	ND	mg / Kg	• • • • • • • • • • • • • • • • • • •	25		11-01-04	11-01-04
Sample:	SDI	NMG28					Collected: 10-2	1-04 9 12:01	0 By: 1	<b>MB</b> .	40, 00, 800m, 6444, 8460, 7		e i riste armi
Matrix:	С										ana 1 man manu ana		n had she hade he had she
QC Group		Run Seq	uence	CAS Ø		Ansiyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-2	28A			SW846 5035	8/80158	GRO by GC/FID				By:	TRS		
X041402		XG.2004.1	913.22		en en manine se	line Range Organic	s ND	mg / Kg	1	0.25		10-29-04	10-29-64
0410577-2	28A			SW846 8015	B Diese	Range Organics	by GC/FID			By:	MDE		
XD41414		XG.2004.1	824. 17		Diez	el Range Organics	ND	eng / Kg	1	25		11-01-04	11-01-04
Sample;	SO	NMG29		aanden (entrins)			Collected: 10-2	1-04 10:41.1	00 BY: 1	MB			
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QC Group	•	Run Seq	uence	CAS #		Anaiyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410677-2	29.A			SW846 5035	B/8015B	GRO by GC/FID				By:	TRS		
X041402		XG.2004.1	913:23		Gaso	line Range Organic	s ND	mg / Kg	1	0.25		10-29-04	10-29-04
0410677-3	29A			SW846 8016	i mini an ray aya ta	Range Organics				By:	MDE		
X041414		XG.2004,1	924.18		Dies	el Range Organica	NO	mg / Kg	1 <b>1</b>	25		11-01-04	11-01-04
Sample:	SD	NMG30			1		Collected: 10-2	1.04 12:45	00 By: 1	MB		enand Hattabera Cohere	y
Matrix:	С												
									Dilution	Detection		Prep	Run
QC Group	•	Run Seq	uence	CAS #		Analyte	Result	Units	Factor	Limit	Code	Date	Date
0410577-3	ADA			SW848 5036	B/8015B	GRO by GC/FID				By	TRS		
X041402		XG.2004.1	913.24			ine Range Organic	s ND	mg / Kg	1	0.25	•••••••	10-29-04	10-29-04
0410577-3	30A			SW846 8015	B Diese	Range Organics	by GC/FID			By:	MDE		
X041414		XG.2004.1	924.19			el Range Organica	5 ···	mg / Kg	1	25		11-01-04	11-01-04
Sample:	60	NMG31					Collected: 10-2	1-04 13:33	10 Ry	MB			alge also summer i
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QC Group	>	Run Seq	uence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-3	31A			SWB46 5035	iB/80158	GRO by GC/FID				By:	TRS		
X041408		XG.2004.1	921.6		Gaso	line Range Organic	s ND	mg/Kg	1	0.5		10-30-04	10-30-64
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Page 8 of	11				SQLO	wate: Reports	1,1.0410200835XX			Report Dat	e ti/	22004 5	33:56 PM

### Asselgal Analytical Laboratories, inc. Certificate of Analysis

Cilient: Project:		VIRONMI G 148	ENTAI	L PLUS, I	NC.								
Order:	041	0577	ENV	03	Receipt	10-26-04							
Sample:	SD	NMG31				531 AT 1511 1.500 99 99 99 99 99 99	Collected: 10-2	1-04 13:33	00 By: 1	MB			
Matrix	С												
QC Group	) 	Run Seq	whice	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-3	1Å			SW846 80	158 Diese	Range Organics b	y GC/FID			By:	MDE		
X041414		XG.2004.19	924,20	i a hanne reger of	nganar na mga na	el Range Organics	ND	mg / Kg	1	25	· · · > 2 · · · · · · · · · · · · · · ·	11-01-04	11-01-04
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QC Group		Run Soq	uerice	CAS #	1	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0410577-3	24			SW846 50	358/8015B	GRO by GC/FID				By.	TRS		
X043406		XG.2004:1	921,9		Gaso	line Range Organics	NÔ	mg / Kg	<u>i</u> 1	0.5	an ann an	10-30-04	10-30-04
0410577-3	2A			SW846 80	158 Diese	Range Organics b	y GC/FID			By:	MOE		
X041414		XG.2004.19	924.21		Dies	el Range Organics	ND	mg / Kg	1	25		11-01-04	11-01-04
Sample: Matrix:	SD C	NMG33	i i an an an Angela Chan		i,	alala de HyPTRAIN, > : : -r≫€ - monore	Collected: 10-2	2-04 8:00:0	) By; i	NB			- <i></i>
QC Group	•	Run Seq	uence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Oato
0410577-3	3A			SW846 60	15R/2015R	GRO by GC/FID				By:	TRS		
X041406		XG 2004.1	821,1D			line Range Organics	ND	mg / Kg	1	0.5		10-30-04	10-30-04
0410577-3	34			5W846 80	158 Diese	Range Organics b	y GC/FID			By:	MDE		
X041414		XG.2004.1	924.22	Matare 19 191 4 1 1 1	Dies	el Range Organics	ND	mg / Kg	1	25		11-01-04	11-01-04
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0410577-3	44			SW846 50	35B/8016B	GRO by GC/FID				By:	TRS		
X041406		XG.2004.1	821.11		Gaso	line Range Organics	ND	mg / Kg	1	0.5		10-30-04	10-30-04
0410577-3	4A			SW846 80	158 Diese	Range Organics b	y GC/FID			By:	MDE		
X041414		XG.2004.1	824.23		Dies	el Range Organics	NĎ	mg / Kg	1	25		11-01-04	11-01-04
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0410577-3	15A			SW846 50:	358/80158	GRO by GC/FID				By:	TRS		
X041405		XG.2004.11	021.12			Ine Range Organics	NO	mg / Kg	1	0.5	······································	10-30-04	10-30-04
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#### Assalgai Analytical Laboratories, Inc. Certificate of Analysis

Client:		VIRONMI	ENTAI	L PLUS, I	NC.									
Project:		IG 148			Description									
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0410577-3	36A			SW846 80		I Range Organics I	······································				By:	MDE		
X041414		XG 2004.1	24,25		Die	sel Range Organics	5	<b>\$</b> ACT 1015-000	mg / Kg	1	25		11-01-04	11-01-04
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X041414	31 M.	XG 2004,1	24.28	944949 SU	aliyan ana co con dice.	I Range Organics I sel Range Organics	N SCIENC	D	mg / Kg	1	By: 25	<b></b>	11-01-04	11-01-0
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0410577-3	38A			SW846 50	358/60156	GRO by GC/FID					By:	TRS		
X041412		XG 2004.1	11,66	Service and and a service and	Gasc	iline Range Organic	s N	D	mg / Kg	1	0.5		11-02-04	11-02-0
0410577-3	38A			SW846 80	158 Diese	I Range Organics I	by GC/FID				By:	MDE		
X041414		XG 2004.1	24.29		Die	sel Range Organics	N	D	mg / Kg	1	25		11-01-04	11-01-0
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0410577-3	39 <b>a</b>			SW846 50		GRO by GC/FID					By:	TRS		
X041412		XG.2004.11	133,12		Gase	iline Range Organic	s N	D	mg / Kg	1	0.5	· ·	11-02-04	11-02-04
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#### Assaigai Analytical Laboratories, Inc. Certificate of Analysis

Client;	EN	VIRONMENTA	L PLUS, I	NC.							
Project: Order:		IG 148 10577 ENV	03	Receipt: 10-26-04							
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0410577-3	API		SW846 80	158 Diesel Range Organics by	GC/FID			By:	MDE		
X041414		XG.2004.1924.30		Diesel Range Organics	ND	mg / Kg	1	25	······································	11-01-04	11-02-04
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0410577-4	IOA.		SW846 60	358/60158 GRO by GC/FID				By:	TRS		
X041412		XG.2004.1933.13		Gasoline Range Organics	ND	mg / Kg	<u>)</u>	0.5		11-02-04	11-82-04
0410577-4	IOA		SW846 80	16B Diesel Range Organics by	GC/FID			By:	MDE		
X041414		XG.2004.1624.31	1	Diesel Range Organics	ND	mg / Kg	1	25		11-01-04	11-02-04
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0410577-4	HA		SW846 50	358/60158 GRO by GC/FID				By:	TRS		
X041412		XG.2004.1933.14	www.commer.	Gasoline Range Organics	ND	mg/Kg	<u> </u>	0.5		11-02-04	11-02-04
0410577-4	11A		SW846 80	15B Diesel Range Organics by	concerning a company of the second se			By:	MDE		
X041398		XG 2004, 1900,6		Diesel Range Organics	E 1465	and a state of	1	25		10-28-04	10-28-04
			k	and the second	ND	mg / Kg		the system with some here and			
Sample:	SD	NMG42 WSWC	• • • • • • • • • • • • • • • • • • •			2-04 18:351	00 By: /	W8			
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Matrix: QC Group D410577-4	C	Run Sequence	CAS # 5W946 59	Analyte 358/80158 GRO by GC/FID	Collected 10-2	2-04 18:351 Units	Dilution Factor	Detection Limit By:		Date	Date

Unless otherwise noted, all samples were received in acceptable condition and all sampling was performed by clent or clent representative. Sample result of ND indicates Not Detected, in result is test than the sample specific Detection Linkle. Sample sample District By the issued Reporting Detection Linkl. All results relate only to the items tested. Any miscelleneous workproterior information or formation will appear before.

Analytical results are not corrected for method blank or field blank contamination.

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Duke Energy. Field Services

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Client	ENVIRONMENTAL	PLUS. INC.					ę "n.	مناطق		
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Örder:	0411146 ENV	03 Receipt:	11-05-04	Pac-	Acher	sto Artal	Andrew Lab	er Vestanes, me	e de la compañía de la	
Sample:	SDNMG10250443			Collected: 10-25	-04 7:30.00	By: 1	18			
Mabrix:	C	and a set of the Martin Martin Martin Constant States and a set	s contraction de la superior de la s			03.45	Detection		Prep	Run
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0411146-01	A	SW846 5035B/8015	manine in all a low and the second	······································			By:	TRS		
XD41437	XG 2004, 1965, 7	Gas	oline Range Organics	ND	mg / Kg	<b>1</b>	0.5		11-09-04	11-09-04
0411146-01	IA XG,2004.1998.8		el Range Organics b esei Range Organics	y GC/FID ND	mg/Kg	1	8ý: 25	MDĘ	11.11.04	11-11-04
XD41451	AC.2204.1000.0	: ••••••••••••••••••••••••••••••••••••	Tack Funde Collanda	· · · · · · · · · · · · · · · · · · ·	••••••••••••••••••••••••••••••••••••••	······				
Sample: Matrix:	SDNMG10250444 C			Collected: 10-28	1-04 8:36:00	By; /	<b>NB</b> .			
÷,	· · · · · · · · · · · · · · · · · · ·	·	warre isling pressure i comm			Dilution	Detection		Prep	Run
QC Group	Run Sequence	CAS #	Analyte	Result	Units	Factor	Limit	Code	Date	Date
0411146-02	7A	SW646 50358/8015	H GRO by GC/FID				By:	TRS		
X041437	XG.2004.1965.10	1. Specified in the second process was a constructed by the second process of the sec	oline Range Organics	ND	mg / Kg	1	0.5		11-09-04	11-09-04
0411146-02	ZA	SW846 8015B Dies	el Range Organics b	y GC/FID			By:	MDE		
X041461	XG 2004 1996 B	Di	esel Range Organics	ND	ring / Kg	: <b>1</b>	25		11-12-04	11-11-04
Sample	SDNMG10250445	алан - <sub>Луур</sub> икиндак Акитан на украницију илин		Collected: 10-2	5-04 9:45:00	By: /	WB	t. Was Vistalaan		
Matrix:	Ċ		· · · · · · · · · · · · · · · · · · ·		. :				ng	
	×	040 H	# 14 a & 14 a	Ph in	\$ \$		Detection	P + d +	Prep	Run
QC Group	Run Sequence	CAS #	Analyte	Result	Units	Factor	Limit	Code	Date	Date
0411146-03		SW846 5035B/8015	egy a star is a same for printing and a summary			vç şaranı i	By	TRS	54.000 P.4	ii ne a
XC41437	XG.2084.1686.11	Gas	soline Range Organics	ND	mg / Kg	<b>i</b>	0.5	: : •••••••••••••••••••••••••••••••••••	11-09-04	11-09-04
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Client: Project:		VIRONMEN KE ENERG											
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Sample:	SD	VMG10250	445	·····			Collected: 10-	25-04 9:45 0	9 By: /	ŴÐ			
Matrix:	С												
QC Group	3	Run Seque	nce	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code		Run Date
0411146-0	3A			SW846 80	168 Diese	I Range Organics I	by GC/FID			By:	MDE		
X041461	-	XG 2004 1996	(10		wages die in street en street	sei Range Organica	ND	mg   Kg	1	25		11-11-04	11-11-04
Sample:	en	NMG10250	116				Collected: 10-	25-04 11-241	20 By: (	waa ka k	en e		
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QC Group	\$	Run Seque	100	CAS #	••••	Analyte	Result	Unite	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-0	MA.			SW846 50		GRO by GC/FID				By:	TRS		
X041437		XG:2004.1985	.12	·	Gase	Nine Range Organic	\$ ND	mg / Kg	<b>1</b>	0.5		11-09-04	11-09-04
0411146-0	ма			SW846 80		Range Organics			y	By;	MOE		
2041461		XG.2004.1996	121		Die	sel Range Organics	ND	mġ/Kg	1	25		15-11-04	11-11-04
Sample: Matrix:	SD C	NMG10250	447				Collected: 10-	25.04 13 16.	00 By: 1	MB		· · · · · · · · · · · · · · · · · · ·	
QC Group	<b>.</b>	Run Seque	nce	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-0	ISA			SW846 50	358/80158	GRO by GC/FID				By:	TRS		
XD4 14:37		XG.2004.1985	13			iline Range Organic	s ND	mg / Kg	1	0.5		11-09-04	11-09-04
0411146-0	ISA			SW846 80	158 Diese	I Range Organics.	by GC/FID			By:	MDE		
X041461		XG.2004.1998	12	,	Die	sel Range Organics	ND	mg / Kg	1	25		11-11-04	11-11-04
Sample: Matrix:	SD C	NMG10250	448				Collected: 10-	25-04 15:03:	00 By: I	M8			
QC Group	>	Run Seque	100	CAS #		Analyte	Result	Units	Dilution	Detection Limit	Code	Prép Date	Run Date
		·· # 3.• 5.• .					na state de la	and dian		÷ .			
0411146-0 X041437	юа	XG.2004.1985	14	SW846 50	constant or constants	I GRO by GC/FID sline Range Organic	s ND	ma / Ka	1	Βγ; 0,5	TRŞ	11-09-04	11-09-04
					anderene more encourse	e romane ar dan de a Timoriadam Aliana de de	inner a far er seren en er			· · · · · · · · · · · · · · · · · · ·			
0411146-0 X041461	ЮA	XG.2004.1958	.15	SV1040 60		H Range Organics sel Range Organics	ND	mg / Kg	: 1	By: 25	MDE	11-11-04	11-11-04
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Sample: Matrix:	SD. C	NMG10260	449			with the second	Collected: 10-	26-04 8:20:0	0 By: 1	M8			
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<b>0411146-0</b> X041437	17A	XG.2004.1986	36	SW846 50		I GRO by GC/FID sline Range Organic	s ND	mg / Kg	: 1	By: 0.5	TRS	ta-09-04	11-09-04
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Ctent: Project	DUI	/IRONMENTAI (E ENERGY N	MG 148									
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Sample:	SDI	VMG10260449				Collected: 10-26	-04 8:20:00	By: I	NB			
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QC Group	Þ	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	•	Run Date
0411146-0	74		SW846 80	158 Diese	i Range Organics k	w GC/FID			By:	MDE		
X041461		XG.2004.1998.16		Die	sel Range Organics	ND	mg / Kg	1	26		11-11-04	11-11-04
Sample:	SD	NMG10260450	, ., skeartiiniin			Collected: 10-20	-04 9:33:00	) By: I	MB			****
Matrix	c											
QC Group		Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
			614164C 20		GRO by GC/FID				By:	TRS		,
0411146-0 X041437	IBA	XG.2004.1985.17	344040 00		line Range Organic	NO NO	mg / Kg	i ini shatar posonitye L	0.5		11-09-04	11-09-04
0411146-0	BA		SW846 80	158 Diese	Range Organics I	w GC/FID			By:	MDE		
X041451		XG.2004.1998.17			sel Range Organics	NO	mg / Kg	<b>*</b>	25		11:11-04	11.15-04
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QC Group	<u>,</u>	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Rùn Dat <del>e</del>
0411146-0	AR		SW846 50	358/80156	GRO by GC/FID				By:	TRS		
8041437		XG.2004.1985:18	:	Gaso	oline Range Organic	s ND	mg í Kg	1	0.5		11-09-04	11-00-04
0411146-0	99A		SW846 80	158 Diese	N Range Organics I	by GC/FID			By:	MDE		
X041461		XG 2004 1998 18	: 	Die	sel Range Organics	NÔ	mg / Kg	1	25		11-11-04	11-11-04
Sample: Matrix:	SD C	NMG10260452				Collected: 10-2	5-04 13:10.1	00 By:	MB			
QC Grout	¢.	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1	10A		SW846 50	135B/8015E	GRO by GC/FID			a francisco de situa deserta	By:	TRS		
8041437		XG.2004.1985.19	· · · · · · · · · · · · · · · · · · ·	Gaso	oline Range Organic	s ND	mg / Kg	1	0.5		11-09-04	11.09-04
0411146-1	10A		SW845 80		el Range Organics I				By:	MDE		
X041461		XG 2004 1998 19	5 	Die	sei Range Organics	ND	mg / Kg	: 1	: 25		11-11-04	11-11-04
Sample: Matrix:	SD C	NMG10260453			anala ana manananana ara	Collected: 10-2	8-04 14:31:1	20 By:	148			
QC Group	þ	Run Sequence	CAS#		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1 X041437	11A	XG.2004.1965.28	SW846 50		3 GRO by GC/FID dine Range Organic	s -ND	mg / Kg	1	By: 0.5	TRS	17-09-04	r 13-09-04
Page 3 of	9			SQLC	byote: Reports	1.1.0411031209XX		*******************************	Report Da	6 11/12	2004 11:	30.44 AM

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Project	DUK	(E ENEI	RGY N	MG 148									
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Sample	SDA	IMG102	60453			x	Collected: 10-26	04 14 31 0	0 By; (	KB		•••• • • •	χ
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			an an thuman to the						Dibdion	Detection		Prep	Run
QC Group	3	Run Seq	uence	CAS #		Analyto	Result	Units	Factor	Limit	Code	Date	Date
0411146-1	11A			SW846 80		Range Organics b				By;	MDE		
X041481		XG.2004.1	898.20		Die	sel Range Organics	ND	mg / Kg	1	25		11-11-04	11-11-04
Sampie: Matrix:	SDN C	IMG102	70454			aa maanaa ah amayoo ahaa ahaa ahaa ahaa ahaa ahaa ahaa	Collected: 10-27	·04 7:35·00	) Ву: І	VB	in the first of the standing of	y,	1
QC Group	¢.	Run Seq	uence	CAS #	· e · · ·	Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1	12A			SW846 50	358/8016E	GRO by GC/FID				By:	TRS		
X841437		XG.2004.1	985.21	· · · · · · · · · · · · · · · · · · ·		oline Range Organica	NO	mg / Kg	1	Q.5	ر فیدی مسئلہ میٹر اُندینر میڈ وا جات	11-09-04	11-09-04
0411146-1	12A			SW846 80	158 Diese	el Range Organics t	y GC/FID			By:	MOE		
X04 1464		XG, 2004. 1	399,5		Die	sel Range Organics	ND	mg / Kg	1	25		11-11-04	11-11-04
Sample: Mabix	SDA C	IMG102	70455	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Collected, 10-27	04 8 37:00	9 Ву:	MB			
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0411146-1	13A			SW846 60	358V8015E	GRO by GC/FID				By:	TRS		
X04 1437		XG. 2004.1	985.22		estes - statution i partir / million	oline Range Organics	i ND	rng í Kg	<b>1</b>	0.5		11-09-04	11-09-04
0411146-1	13A			5W846 80	158 Diese	A Range Organics L	w GC/FID			By	MDE		
X041d84		XG.2004.1	999,9	· herber 22	Die	sel Range Organics	ND	mg í Kg	\$	25		11-11-04	11-11-04
Sample: Matrix:	SDI C	VMG102	70456				Collected: 10-21	7-04 9:50 01	) By:	MB			
									Dilution	Detection		Prep	Run
QC Group	p	Run Sec	uence	CAS #		Analyte	Result	Units	Factor	Limit	Code	Date	Date
0411146-1	14A			SW846 50	358/80156	GRO by GC/FID				By:	TRS		
X041437		XG.2004.	985.23		Gase	oline Range Organic:	ND	mg / Kg	1	0.5	and a second sec	11-09-04	11-06-04
0411146-	14A			SW846 80	158 Dies	el Range Organics I	ry GC/FID			By:	MDE		
X041484		XG 2004	999 10		De	sei Range Organice	ND	mg / Kg	1	25		11-11-04	11-11-04
Sample:	SDI	VMG102	70457	10,000,000,000,000,000,000,000			Collected: 10-2	7-04 11:44	10 By:	Ma		· · · · · · · · · · · · · · · · · · ·	<b></b>
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0411146-	15A			SW846 50	35B/8015E	GRO by GC/FID				By:	TRS		
X041437		XG.2004.1	985.24	, i ji , <sup>e</sup> , i , i , i , i , i , i , i , i , i ,		oline Range Organica	s ND	mg / Kg	1	0.5		11-09-04	11-09-04
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Chent: Project:	ENVIRONMENTAL DUKE ENERGY N		IC.								
Order:	0411146 ENV	03 :	Receipt	11-05-04							
Sample:	SDNMG10270457		••••		Collected: 10-2	7-04 11:44:0	ю Ву: /	NB			
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QC Group	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code		Run Date
0411146-1	#A	SIMPLE POT	5R Diece	I Range Organics t	W GC/FID			By:	MDE		
X041464	XG.2004.1999.11			sel Range Organics	ND	mg / Kg	* · · · · ·	25		11.11-04	\$1-11-04
Sample:	SDNMG10270458				Collected: 10-2	7-04 13:20:1	X2 By: /	NB			
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QC Group	Run Sequence	CAS#		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1	6A	SW846 503	58/80158	GRO by GC/FID				By:	TRS		
X041439	XG.2004.1979.7		Gaso	time Range Organic:	ND	mg / Kg	1 	<b>0.5</b>		11-05-04	31-08-04
0411146-1	6A	SW846 801	68 Diese	i Range Organics I	oy GC/FID			By:	MOE		
X841484	XQ,2004,1599.12		Dier	sel Range Organics	ND	mg / Kg	. 1	25		11-11-04	11-11-04
Sampie: Matrix:	SDNMG10270459 C				Collected: 10-2	7-04 15:00	90 By: 1	VØ			
QC Group	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1	7A	SW848 503	56/80158	GRO by GC/FID				By:	TRS		
X041439	XG.2004.1979.10			tine Range Organic	s ND	mg / Kg	1	0.5	[	11-08-94	11-08-04
0411146-1	7A	SW846 801	58 Diese	I Range Organics I	by GC/FID			By:	MDE		
X041464	XG.2004.1999.13		Die	sel Range Organics	ND	mg / Kg	1	25	[,	11-11-04	11-11-04
Sample: Matrix	SDNMG10280460 C				Collected: 10-2	8-04 8:04:0	Ø By.	MB			
2000000 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2		manta ditait (parta									
QC Group	Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection	Code	Prep Date	Run Date
0411146-1		SW846 503		GRO by GC/FID		مريد المعالية منهمة		By	TRS		
XB41439	KG.2004 1970 11	· · · · · · · · · · · · · · · · · · ·	Gase	oline Range Organic	B NO	: mg / Kg		0.5	į	11-05-04	11-08-04
0411146-1		SW846 801	****	A Range Organics	Contraction of the second s			Өу	MDE		
X041464	XG 2004, 1999, 16		Die	sel Range Organics	ND	mg / Kg		25		11-11-94	11-13-04
Sample: Matrix:	SDNMG10280461 C	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			Collected: 10-2	28-04 9:11 0	0 By:	MB			
QC Group	> Run Sequence	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
0411146-1	19A	SW846 503	5B/80158	GRO by GC/FID				By	TRS		
X041439	XG 2004.1979.12	ist on the second se	2 mai ganaga www.www.iwa	oline Range Organic	s ND	∣mig/Kg	1	0.5		11-08-04	11:06-04
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Chent: Project:		VIRONME KE ENER			NC.								
Order:		1146	ENV		Receipt	11-05-04							
Sample	só	NMG1028	11461				Callected: 10-2	8-04.9:11.00	) By: A	18			.,
Matrix	C	WING / 020	NAMO I										
	. <b>*</b> .								Dilution	Detection		Prep	Run
QC Group	3	Run Sequ	sence	CAS #		Analyto	Result	Units	Factor	Limit	Code	Date	Date
0411146-1	9A			SW846 80	158 Diese	l Range Organics t	vy GC/FID			By;	MDE		
X041484		XG.2004.19	299,17		Die	sel Range Organics	ND	rng / Kg	1	25		11-11-04	11-11-04
Sample:	so	NMG1028	10462				Collected: 10-2	8-04 10:40:0	10 By: A	ИB			aliya yayaana
Matrix	c												
						an a			Dilution	Detection	<b></b>	Prep	Run
QC Group	)	Run Sequ	ence	CAS #		Analyte	Result	Units	Factor	Limit	Coda	Date	Date
0411146-2	20A			SW846 50	358/60158	GRO by GC/FID				By:	TRS		
X041430		XG 2004.19	979.13			line Range Organics	i ND	mg í Kg	1	0.5	boxeccases as .	11-08-04	11-08-04
0411146-2	DA			SW846 80	15B Diese	I Range Organics (	y GC/FID			By:	MDE		
X041464		XGL2004.19	999.18		Dia	sel Range Organics	ND	mg / Kg	1	25		11-11-04	11-11-04
Sample: Matrix:	SD C	NMG1021	30463	a a constructive production of the		waa waala caasaa ka ka ca	Collected: 10-2	8-04 11:50	00 By: /	W8			
QC Group		Run Seq	ience	CAS #		Analyte	Result	Units	Dilution Factor	Detection Limit	Code	Prep Date	Run Date
ac aroup		nullooq			er gat i t		• **Caul Set 166 ** 16						
0411146-2 X041439	214	XG 2004.11	536 A 4	SW846 50		GRO by GC/FID	ND	ing / Kg	1	8y:	TRS	11.08.04	11-08-04
		ACT 2004-0	av # .14			••••••••••••••••••••••••••••••••••••••	افغا محفظها البين مستهمهما بالارد الاستم ا	11191159		8		17.00.00	
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Analytical results are not conjected for illethod blank or field blank contarivation.

P The percent recovery of the eurogets, associated with this sample, is outside of OAVOC criteria (low). This is attributed to matrix interference.

Page 9 of 9

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## NEW MEXICO STATE LAND OFFICE Ray B. Powell, Commissioner of Public Lands New Mexico State Land Office Building P.O. Box 1148, Santa Fe, NM 87504-1148

## RIGHT OF ENTRY PERMIT CONTRACT NO. 707

### **1. RIGHT OF ENTRY PERMIT**

This permit is hereby issued under the authority established by Section 19-1-2 NMSA (1985). Therefore, and in consideration of and subject to the terms, covenants, conditions, agreements, obligations and reservations contained in the permit and all other existing rights, the Commissioner of Public Lands, New Mexico State Land Office, State of New Mexico, hereinafter called "COMMISSIONER," grants to Duke Energy Field Services c/o Environmental Plus, Inc. of PO Box 1558, Eunice, NM 88231 hereinafter called "PERMITTEE," authorized use of a specific tract(s) of state trust land described in this permit.

#### 2. TERM AND LAND DESCRIPTION

Right of entry is granted for a term of 3 months commencing December 18, 2002 to March 18, 2003 to the following state lands: **XE4SW4 of Section 16, Township 19 South, Range**  $S\xi$ 

#### 3. FEE.

\$300.00 (Three Hundred Dollars)

#### 4. PERMITTED USE

Permitted use is for the purpose of: Delineate and characterize the extent pipeline fluid contamination and excavate soil for remediation purposes, i.e., off-site disposal, mechanically shred/aerate, land spread, blend and treat the released pipeline fluids. An undetermined number of ground water observation monitor wells will be installed. The granting of this permit does not allow access across private lands.

#### 5. IMPROVEMENTS

No improvements shall be placed on the premises without the prior written consent of the Commissioner.

#### 6. RESERVATIONS

Commissioner reserves the right to execute permits on the land granted by this permit for mining purposes and for the extraction of oil, gas, salt, geothermal resources, and other mineral deposits therefrom and the right to go upon, explore for, mine, remove and sell same. Commissioner further reserves the right to sell or dispose of natural surface products of said lands and to grant such other right-of-way and easements as provided for by law.

#### 7. COMPLIANCE WITH LAWS

Permittee shall at its own expense comply fully with and be subject to all regulations, rules, ordinances, and requirements of the Commissioner including, but not limited to the Cultural Properties Act, NMSA 1978 as amended. It is illegal for any person or his agent to appropriate, excavate, injure, or destroy any historic, or prehistoric ruin or monument, or any object of historical, archaeological, architectural, or scientific value situated on lands owned or controlled by the State Land Office without a valid permit issued by the Cultural Properties Review Committee and approved by the Commissioner of Public Lands.

## 8. HOLD HARMLESS

Permittee shall have, save, and hold harmless, indemnify and defend Commissioner and the State of New Mexico, and their agent or agents, in their official and individual capacities, of and from any and all liability claims, losses, or damages arising out of or alleged to arise out of or indirectly connected with the operations of Permittee under this permit off or on the Commissioner' premises or arising out of the presence on the Commissioner's premises of any agent, contractor or subcontractor of Permittee.

#### 9. AMENDMENT

This permit shall not be altered, changed or amended except by an instrument in writing executed by Commissioner and Permittee.

## 10. WITHDRAWAL

Commissioner reserves the right to withdraw any or all of the land authorized for use under this permit. If applicable, Permittee shall vacate the acreage specified within 30 days after receipt of written notification of withdrawal from the Commissioner.

## **11. CANCELLATION**

The violation by Permittee of any of the terms, conditions or covenants of this permit or the nonpayment, by Permittee of the fees due under this permit shall at the option of the Commissioner be considered a default and shall cause the cancellation of this permit 30 days after Permittee has been sent written notice of such.

## **12. PRESERVE AND PROTECT**

The Permittee agrees to preserve and protect the natural environmental conditions of the land encompassed in this permit, and to take those reclamation or corrective actions that are accepted soil and water conservation practices and that are deemed necessary by the Commissioner to protect the land from pollution, erosion, or other environmental degradation.

#### **13. RECLAMATION**

The Permittee agrees to reclaim those areas that may be damaged by activities conducted thereon.

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## **14. SPECIAL INSTRUCTIONS AND OR RESTRICTIONS**

1. No off road traffic allowed

No wood collection or tree cutting allowed. 2.

Disturbing, dislodging, damaging, defacing, destroying or removing historical 3. archaeological, paleontological or cultural sites or artifacts is prohibited.

4. Disturbing, dislodging, damaging, defacing, destroying any improvement, fixture, item, object or thing placed or located in, under or upon the land is prohibited.

5. Entries to lands are limited to those State Lands with public access.

Any other activities not listed are not allowed unless prior written approval from the 6. Commissioner of Public Lands is granted.

WITNESS the hands and seals of PERMITTEE and COMMISSIONER on the day and year first above written.

Telephone: 505 PERMITTEE

ACKNOWLEDGMENT

STATE OF NEW MEXICO **COUNTY OF** 

foregoing instrument was acknowledged before me this O COM DOX 20 Ck

My Commission Expires:  $\delta$ 

NOTARY PUBI

COMMISSIONER OF PUBLIC

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# Closure Proposal Approval Letter - October 7, 2004



## NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

BILL RICHARDSON Geverner Johanne Prokop Calitant Secretary

Lori Wrotenbery Disater Of Conservation Division

October 7, 2004

Mr. Stephen Weathers Duke Energy Field Services, Inc. 370 17<sup>th</sup> St., Suite 900 Denver, Colorado 80202

#### RE: NMG-148C PIPELINE RELEASE SITE ELDRIDGE RANCH ABATEMENT PLAN AP-33 MONUMENT, NEW MEXICO

Dear Mr. Weathers:

The New Mexico Oil Conservation Division (OCD) has reviewed the following Duke Energy Field Services' (Duke) February 25, 2004 "SOIL REMEDIATION STATUS AND CLOSURE PROPOSAL, NMG-148C PIPELINE RELEASE, LEA COUNTY, NEW MEXICO (UNIT N, SECTION 16, T19S R37E)" and accompanying January 2004 "NMG-148C RELEASE SITE, SOIL REMEDIATION STATUS AND CLOSURE PROPOSAL." These documents contain Duke's proposal for the remediation of soils and closure of the excavation at the NMG-148C Pipeline Release Site located at the north end of the Eldridge Ranch Abatement Plan (AP-33) Site.

The above-referenced proposal is approved with the following conditions:

- Duke shall obtain a composite sample from each 200 yards of backfill to demonstrate that the soils have been remediated to OCD soil guidance levels. The samples shall be analyzed for concentrations of BTEX (benzene, toluene, ethylbenzene and xylene) and total petroleum hydrocarbons (TPH) using EPA approved methods and quality assurance/quality control (QA/QC) procedures. A field PID reading of less than 100 ppm of organic vapor may be substituted for a laboratory measurement of BTEX.
- 2. Only soils that meet the OCD's recommended soil remediation levels shall be placed back in the excavation.

Oli Conservation Division \* 1220 South St. Prancis Drive \* Santa Pe, New Mexico 87505 Phone: (595) 476-3440 \* Fax (505) 476-3462 \* <u>http://www.enserd.state.ens.st</u>

- 3. Upon completion of the excavation activities, Duke shall install a ground water monitoring well directly adjacent to and downgradient of the excavated area to demonstrate that ground water in the source area has been remediated to New Mexico Water Quality Control Commission (WQCC) ground water standards.
- 4. The monitor well shall be installed and developed in accordance with OCD's prior investigation work plan approval.
- 5. No less than 24 hours after well development, ground water from the newly installed monitor well shall be purged, sampled and analyzed for concentrations of BTEX and polynuclear aromatic hydrocarbons using EPA approved methods and QA/QC procedures.
- 6. In order to provide a point in time snapshot of overall ground water conditions throughout the site, water quality sampling of the newly installed wells shall be coordinated to coincide with a sampling event of all previously installed monitoring wells.
- All wastes generated shall be disposed of at an OCD approved facility or in an OCD approved manner.
- 8. A comprehensive report containing the results of all remediation and investigation activities shall be submitted to the OCD Santa Fe Office by December 31, 2004 with a copy provided to the OCD Hobbs District Office. The report shall contain:
  - a. A comprehensive description and summary of the results of all past and present soil and ground water investigation, remediation and monitoring activities.
  - b. A site map showing the location of pipelines, excavations, spills, monitoring wells, recovery wells, and any other pertinent site features.
  - c. Summary tables of all past and present soil and ground water quality sampling results including copies of all recent laboratory analytical data sheets and associated QA/QC data.
  - d. The disposition of all wastes generated.
- 9. Duke shall notify the OCD at least 48 hours in advance of all scheduled activities such that the OCD has the opportunity to witness the events and split samples.

Please be advised that OCD approval does not relieve Duke of responsibility if the plan fails to adequately remediate and investigate the extent of contamination related to Duke's activities, or if contamination exists which is outside the scope of the plan. In addition, OCD approval does not relieve Duke of responsibility for compliance with any other federal, state or local laws and regulations.

If you have any questions, please contact me at (505) 476-3491.

Sincerely,

Original signed by William C. Olson

William C. Olson Hydrologist Environmental Bureau

cc: Chris Williams, OCD Hobbs District Office Frank Eldridge Gene Samberson, Heidel, Samberson, Newell, Cox & McMahon Robert G. McCorkle, Rodey, Dickason, Sloan, Akin & Robb

Final form C-141

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

	🔲 Initial Report 🛛 🛛 Final Report	
Name of Company:	Contact:	
Address	Telephone No.	
Facility Name     Facility Type		
Surface Owner: Mineral Owner Lease No.		Lease No.
Unit Letter Section Township Range Feet from the North/South Line Feet from the East/West Line County: Lea		
Unit Letter Section Township Range Feet from the North	/South Line Feet from the East/West L	ine County: Lea
Latitude: <u>32 39' 21.32"N</u> Longitude: <u>103 15' 32.90"W</u>		
Type of Release	Volume of Release	Volume Recovered
Type of Release	Volume of Release	
Source of Release	Date and Hour of Occurrence	Date and Hour of Discovery
Was Immediate Notice Given?	If YES, To Whom?	
🛛 Yes 🗌 No 🗌 Not Required		
By Whom?	Date and Hour	
Was a Watercourse Reached? Xes No	s No If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.*		
Describe Cause of Problem and Remedial Action Taken.*		
4" Steel Pipeline		
Describe Area Affected and Cleanup Action Taken.*		
2,536 sqlt 95 x 40': Site soil has been remediated to NMOCD standards and the surface contoured. Reseeding will occur in the spring of 2005.		
Remedial Goals: TPH 8015m = 100 mg/Kg, Benzene = 10 mg/Kg, and BTEX, i.e., the mass sum of Benzene, Ethyl Benzene, Toluene, and Xylenes = 50 mg/Kg or <100 ppm VOC Headspace.		
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.		
Cianatura:		
Signature:		
Printed Name: Steve Weathers	Approved by District Supervisor:	
E-mail Address: SWWeathers@Duke-Energy.com	Approval Date:	Expiration Date:
Title: Environmental Projects Manager	Conditions of Approval:	
	Attached	
Date: December 27, 2004 Phone: 303.605.1718		
* Attach Additional Sheets If Necessary		