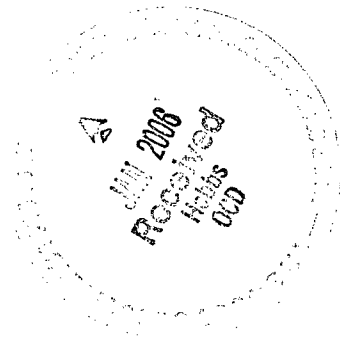


January 18, 2006

**VIA EMAIL: Paul.Sheeley@state.nm.us**  
**VIA CERTIFIED MAIL**

Mr. Paul Sheeley  
Environmental Engineer  
State of New Mexico  
Energy, Mineral and Natural Resources Department  
Oil Conservation Division District 1  
1625 N. French Drive  
Hobbs, New Mexico 88240



**Re: Soil Sample Results and Remediation Work Plan, John H. Hendrix Corporation, Cardinal #1 Well (Plugged), Unit Letter G (SW/4, NE/4), Section 27, Township 19 South, Range 38 East, Lea County, New Mexico** API# 30085 29793 0000

Dear Mr. Sheeley:

This letter is submitted to the New Mexico Oil Conservation Division ("OCD") on behalf of John H. Hendrix Corporation ("JHHC") by Larson and Associates, Inc. ("LA"), its agent, and transmits laboratory results of soil samples collected at the Cardinal #1 well ("Site") located in unit letter ~~G~~ ("SW/4, NE/4"), ~~Section 27, Township 19 South, Range 38 East~~, in Lea County, New Mexico. The Site consists of the well (plugged) and a former tank battery that included two (2) aboveground tanks, circulating pump, separation equipment and gas meter. OCD inspected the Site during well plugging and requested JHHC to remediate soil that was visibly stained with petroleum hydrocarbons. Hydrocarbon staining was visible near the well and separation equipment. JHHC owns the Site and all equipment, except the gas meter, have been removed. A chain-link fence surrounds the Site and a locked gate is located near the northwest corner. The latitude and longitude for the Site is North ~~32° 37' 58.7"~~ and West ~~103° 08' 01.17"~~, respectively. Contact information is as follows:

John H. Hendrix Corporation  
Mr. Marvin Burrows  
Production Manager  
1310 18<sup>th</sup> Street  
Eunice, New Mexico 88231  
(505) 394-2649

*Hendrix - 12024  
Incidents - nPAC0605437043  
application - nPAC0605437099*

Figure 1 presents a location and topographic map. Figure 2 presents a Site drawing.

**Current investigation**

On December 15, 2005, LA personnel used a stainless steel hand auger to collect soil samples

at twelve (12) locations (HA-1 through HA-12), including the tanks (HA-1), circulating pump (HA-2), separation equipment (HA-3 through HA-11) and well (HA-12). Samples were collected in 1-foot increments until caliche was encountered between about 1 and 3 feet below ground surface ("bgs") and prevented further sampling. The hand auger was decontaminated between samples with a solution of laboratory-grade detergent and water and rinsed with distilled water. The samples were placed in 4-ounce glass sample jars, filled to near zero headspace, labeled, chilled in an ice chest and delivered under chain-of-custody control to Environmental Lab of Texas, Inc. ("ELTI"), located in Odessa, Texas. Duplicate samples were collected for headspace analysis by partially filling 8-ounce glass sample jars, covering the openings with a layer of aluminum foil before tightly securing the lids. The headspace samples were warmed to ambient temperature before the probe of a RAE Instruments Model 2000 photoionization detector ("PID"), calibrated to 100 parts per million ("ppm") of isobutylene, was inserted through the aluminum foil to record the concentration of hydrocarbon vapors in the sample headspace. Table 1 presents a summary of the PID readings. Figure 2 shows the sample locations.

Referring to Table 1, PID readings exceeded 100 ppm in samples HA-4, 0' to 1' (525 ppm), HA-4, 2' to 3' (151 ppm), HA-7, 0' to 1' (195 ppm), HA-10, 0' to 1' (2,292 ppm), HA-11, 0' to 1' (210 ppm) and HA-12, 0' to 1' (562 ppm). The laboratory analyzed these samples for benzene, toluene, ethyl benzene and xylene ("BTEX") using method SW-846-8021B. The laboratory analyzed all samples for total petroleum hydrocarbons ("TPH"), including gasoline range organics ("GRO") and diesel range organics ("DRO"), using method SW-846-8015 and chloride by method SW-846-300. Table 1 presents a summary of PID and laboratory analysis. Appendix A presents the laboratory report. Appendix B presents photographs.

Information from the State of New Mexico Office of the State Engineer ("OSE") indicates that ground water is approximately ~~48 feet bgs~~ No wells or surface water are located within 1,000 feet of the Site. Recommended remediation action levels ("RRAL") were calculated based on criteria published by OCD ("Guidelines for Remediation of Leaks, Spills and Releases, August 13, 1993"):

Ranking Criteria	Result	Ranking Score
Depth-to-Groundwater	<50 Feet	20
Wellhead Protection Area	No	0
Distance to Surface Water Body	>1000 Horizontal Feet	0
		<b>Total Score: 20</b>

The following RRAL are assigned to the leak based on the total ranking score (20):

- **Benzene** 10 mg/kg
- **Total BTEX** 50 mg/kg
- **TPH** 100 mg/kg

### Conclusions

Benzene was below the RRAL, but BTEX exceeded the RRAL in sample HA-10, 0 to 1 foot

(167.18 mg/Kg). TPH exceeded the RRAL in the following samples:

Location	Sample	TPH (mg/Kg)
HA-3	0 to 1	1,590
HA-4	0 to 1	3,493
HA-4	1 to 2	1,422
HA-6	0 to 1	21,115
HA-7	0 to 1	22,110
HA-10	0 to 1	21,800
HA-11	0 to 1	33,240
HA-12	0 to 1	10,070

Chloride ranged from 17.6 mg/Kg (HA-5, 0 to 1 foot) to 1,130 mg/Kg (HA-6, 0 to 1 foot).

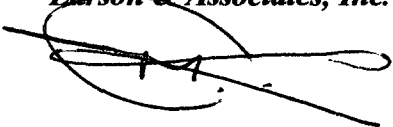
#### **Remediation Plan**

JHHC will excavate soil at locations where BTEX and TPH exceeds the RRAL, including HA-3, HA-4, HA-6, HA-7, HA-10, HA-11 and HA-12. Final samples will be collected from the excavations and analyzed for TPH by a laboratory using method SW-846-8015. Duplicated samples will be collected for headspace analysis, as described earlier, and any sample exhibiting a PID reading above 100 ppm will be analyzed for BTEX using method SW-846-8021B. The soil will be hauled to the JHHC surface waste management facility (NM-02-0021) located northwest of Jal, New Mexico and the excavations will be filled with clean soil.

A final report will be submitted to OCD within 45 days following receipt of the laboratory report and filling of excavations. OCD will be notified at least 48-hours before work is performed at the Site. Your approval of the remediation is requested. If you have questions, please call Mr. Marvin Burrows with JHHC at (505) 394-2649, myself at (432) 687-0901 or email: [mburrows@valornet.com](mailto:mburrows@valornet.com) or [Mark@LAEnvironmental.com](mailto:Mark@LAEnvironmental.com).

Respectfully yours,

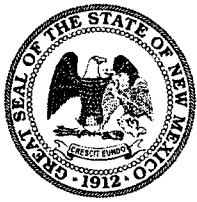
*Larson & Associates, Inc.*



Mark J. Larson, P.G., C.P.G., C.G.W.P.  
Sr. Project Manager/President

Encl.

cc: Marvin Burrows/JHHC  
Ron Westbrook/JHHC  
Buddy Hill/OCD – Hobbs  
Larry Johnson/OCD - Hobbs  
Chris Williams/OCD – District 1  
Roger Anderson/OCD – Santa Fe



# NEW MEXICO ENERGY, MINERALS and NATURAL RESOURCES DEPARTMENT

**BILL RICHARDSON**

Governor

**Joanna Prukop**

Cabinet Secretary

**Mark E. Fesmire, P.E.**

Director

**Oil Conservation Division**

February 23, 2006

Marvin Burrows/JHHC  
John H. Hendrix Corp., (JHHC)  
110 N. Marienfeld St., Ste. 400  
Midland, TX 79701

Re: Cardinal #1 – Corrective Action Approval  
Site Location: UL-G, Sec 27-T19S-R38E  
Dated: January 18, 2006

Dear Mr. Burrows,

New Mexico Oil Conservation Division (OCD) received the corrective action plan prepared by Larson & Associates for JHHC and referenced above. The plan is **hereby approved** according to the information provided.

Please be advised that OCD approval of this plan does not relieve JHHC of liability should their operations fail to adequately investigate and remediate contaminants that threaten ground water, surface water, human health or the environment. In addition, OCD approval does not relieve JHHC of responsibility for compliance with any other federal, state, or local laws and/or regulations.

If you have any questions or need assistance please write or call: (505) 393-6161, ext. 113, or e-mail: [psheeeley@state.nm.us](mailto:psheeeley@state.nm.us)

Sincerely,

Paul Sheeley-Environmental Engineer

Cc: Wayne Price - Environmental Bureau Chief  
Chris Williams - District I Supervisor  
Larry Johnson - Environmental Engineer  
Mark Larson - Larson & Associates

## Tables

Table 1

## Summary of Laboratory Analysis of Soil Samples

John H. Hendrix Corporation, Cardinal #1 Well Location (Plugged)

Unit Letter G (SW/4, NE/4), Section 27, Township 19 South, Range 38 East

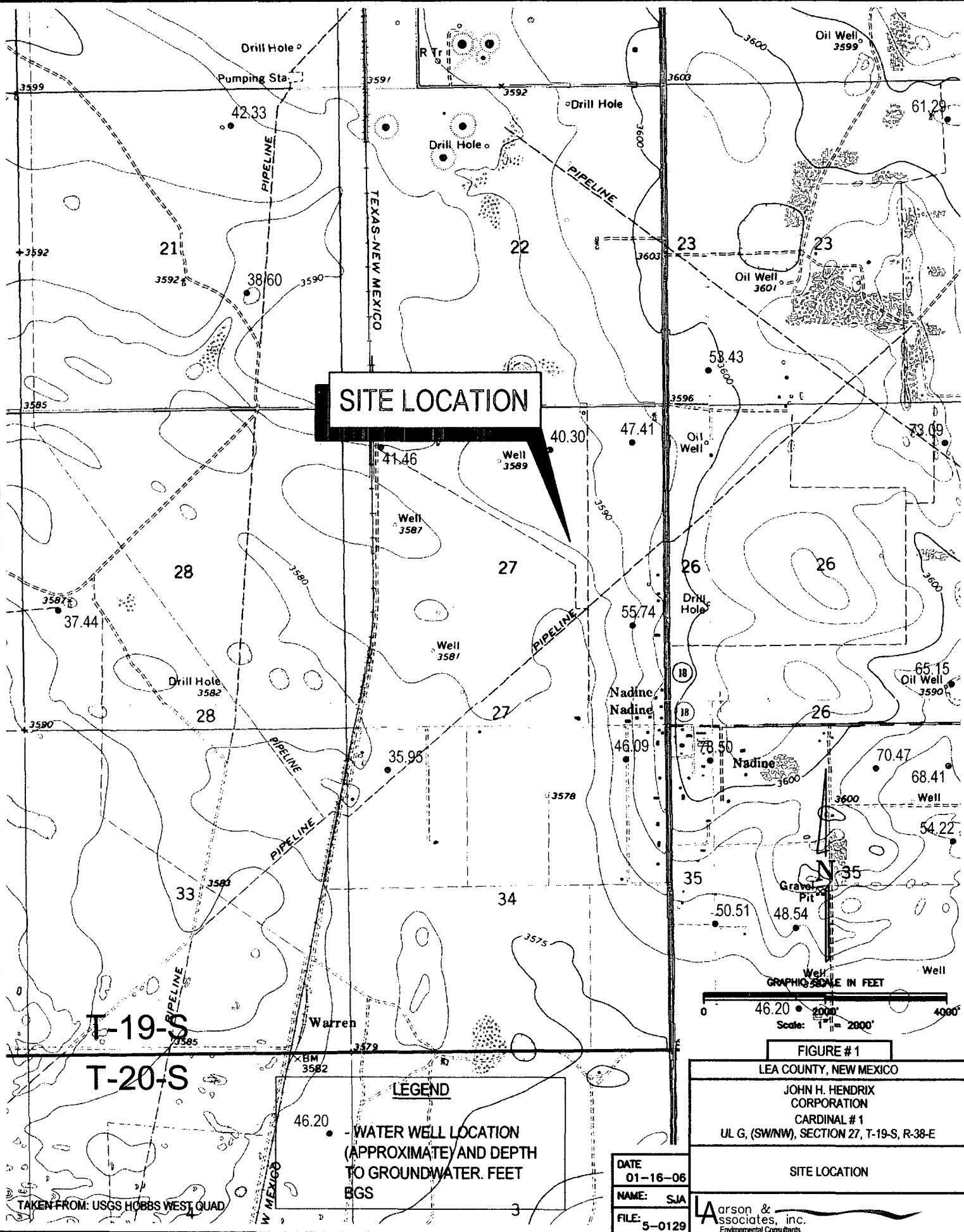
Lea County, New Mexico

Date	Boring	Depth (Feet BGS)	PID (ppm)	Benzene (mg/Kg)	BTEX (mg/Kg)	GRO C6 - C12 (mg/Kg)	DRO >C12-C35 (mg/Kg)	TPH C6-C35 (mg/Kg)	Chloride (mg/Kg)
RRAL:									
				10	50	1,000			
12/15/05	HA-1	0 - 1	2.7	--	--	<10	<10	<20	18.3
12/15/05	HA-1	1 - 2	0.4	--	--	--	--	--	--
12/15/05	HA-1	2 - 3	0.1	--	--	--	--	--	--
12/15/05	HA-2	0 - 1	0.1	--	--	<10	<10	<20	34.3
12/15/05	HA-3	0 - 1	0.1	--	--	<10	1,590	1,590	242
12/15/05	HA-4	0 - 1	525	0.00846	1.50846	353	3,140	3,493	676
12/15/05	HA-4	1 - 2	22.5	--	--	12	1,410	1,422	957
12/15/05	HA-4	2 - 3	151	<0.025	0.2029	6.62	23.6	30.22	888
12/15/05	HA-5	0 - 1	0.1	--	--	<10	<10	<20	17.6
12/15/05	HA-6	0 - 1	5.7	--	--	15	21,100	21,115	1,130
12/15/05	HA-7	0 - 1	195	<0.025	0.9835	1,010	21,100	22,110	444
12/15/05	HA-8	0 - 1	4.1	--	--	<10	<10	<20	24.6
12/15/05	HA-9	0 - 1	1.9	--	--	<10	<10	<20	25.9
12/15/05	HA-10	0 - 1	2,292	7.58	167.18	6,600	15,200	21,800	24.8
12/15/05	HA-11	0 - 1	210	0.0353	6.7293	2,840	30,400	33,240	266
12/15/05	HA-12	0 - 1	562	0.166	37.636	2,310	2,310	10,070	79.5

Notes: Analysis performed by Environmental Lab of Texas, Inc., Odessa, Texas

1. BGS: Below ground surface
2. ppm: Parts per million
3. Mg/Kg: Milligrams per kilogram

## Figures



SITE LOCATION

LEGEND

• WATER WELL LOCATION  
(APPROXIMATE) AND DEPTH  
TO GROUNDWATER, FEET  
BGS



FIGURE #1

LEA COUNTY, NEW MEXICO

JOHN H. HENDRIX

CORPORATION

CARDINAL # 1

UL G, (SW/NW), SECTION 27, T-19-S, R-38-E

SITE LOCATION

DATE

01-16-06

NAME:

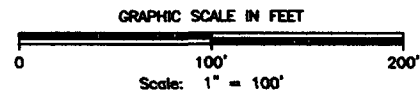
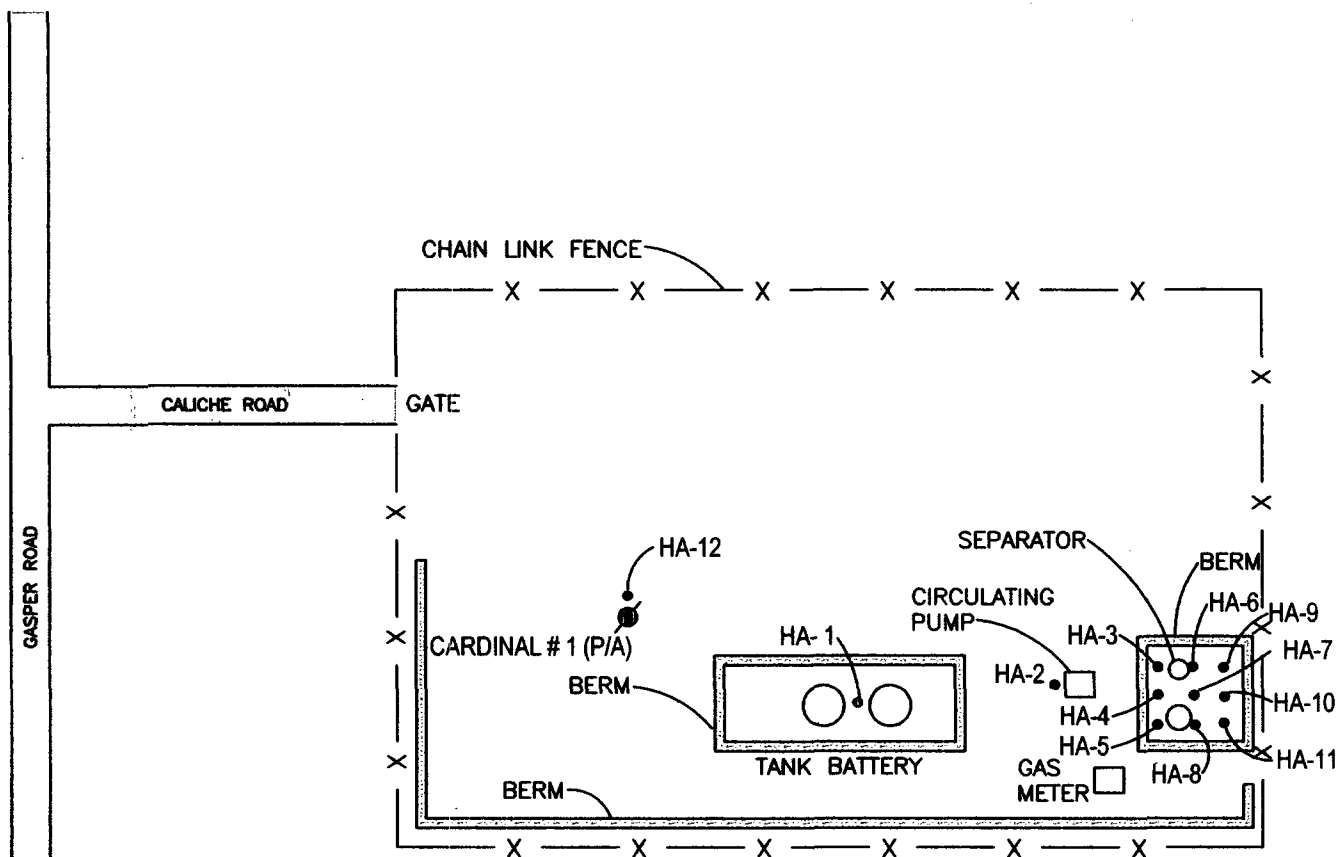
SJA

FILE:

5-0129

Larson &  
Associates, Inc.  
Environmental Consultants

TAKEN FROM: USGS HOBBS WEST QUAD



#### LEGEND

HA-1 • SOIL SAMPLE LOCATION,  
DECEMBER 15, 2005

● PLUGGED OIL WELL LOCATION

NOTE: ALL EQUIPMENT HAS BEEN  
REMOVED FROM LOCATION

#### FIGURE #2

LEA COUNTY, NEW MEXICO

JOHN H. HENDRIX  
CORPORATION

CARDINAL # 1  
UL G, (SW/NW), SECTION 27, T-19-S, R-38-E

SITE DRAWING

DATE  
01-16-06

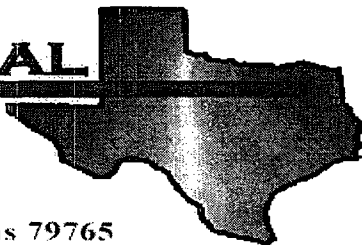
NAME: SJA

FILE: 5-0129

Larson &  
Associates, inc.  
Environmental Consultants

**Appendix A**  
**Laboratory Report**

# ENVIRONMENTAL LAB OF



12600 West I-20 East - Odessa, Texas 79765

## Analytical Report

**Prepared for:**

Mark Larson

Larson & Associates, Inc.

P.O. Box 50685

Midland, TX 79710

Project: Cardinal #1

Project Number: 5-0129

Location: Lea County, NM

Lab Order Number: 5L16002

Report Date: 12/21/05

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

### ANALYTICAL REPORT FOR SAMPLES

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
HA-1 0-1'	5L16002-01	Soil	12/15/05 11:48	12/15/05 16:50
HA-2 0-1'	5L16002-04	Soil	12/15/05 12:05	12/15/05 16:50
HA-3 0-1'	5L16002-05	Soil	12/15/05 12:19	12/15/05 16:50
HA-4 0-1'	5L16002-06	Soil	12/15/05 12:30	12/15/05 16:50
HA-4 1-2'	5L16002-07	Soil	12/15/05 12:38	12/15/05 16:50
HA-4 2-3'	5L16002-08	Soil	12/15/05 12:42	12/15/05 16:50
HA-5 0-1'	5L16002-09	Soil	12/15/05 12:45	12/15/05 16:50
HA-6 0-1'	5L16002-10	Soil	12/15/05 12:55	12/15/05 16:50
HA-7 0-1'	5L16002-11	Soil	12/15/05 13:00	12/15/05 16:50
HA-8 0-1'	5L16002-12	Soil	12/15/05 13:05	12/15/05 16:50
HA-9 0-1'	5L16002-13	Soil	12/15/05 13:12	12/15/05 16:50
HA-10 0-1'	5L16002-14	Soil	12/15/05 13:15	12/15/05 16:50
HA-11 0-1'	5L16002-15	Soil	12/15/05 13:30	12/15/05 16:50
HA-12 0-1'	5L16002-16	Soil	12/15/05 13:42	12/15/05 16:50

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-1 0-1' (5L16002-01) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		96.4 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		102 %	70-130		"	"	"	"	
<b>HA-2 0-1' (5L16002-04) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		107 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		119 %	70-130		"	"	"	"	
<b>HA-3 0-1' (5L16002-05) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	1590	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1590	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		104 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		165 %	70-130		"	"	"	"	S-04
<b>HA-4 0-1' (5L16002-06) Soil</b>									
Benzene	J [0.00846]	0.0250	mg/kg dry	25	EL51627	12/16/05	12/18/05	EPA 8021B	J
Toluene	0.111	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.380	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.638	0.0250	"	"	"	"	"	"	
Xylene (o)	0.371	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		131 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		165 %	80-120		"	"	"	"	S-04
Gasoline Range Organics C6-C12	353	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	3140	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	3490	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		117 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		195 %	70-130		"	"	"	"	S-04

Environmental Lab of Texas

The results in this report apply to the samples analyzed in accordance with the samples received in the laboratory. This analytical report must be reproduced in its entirety, with written approval of Environmental Lab of Texas.

Page 2 of 13

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-4 1-2' (5L16002-07) Soil</b>									
Gasoline Range Organics C6-C12	12.0	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	1410	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	1420	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		104 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		138 %	70-130		"	"	"	"	S-04
<b>HA-4 2-3' (5L16002-08) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EL51627	12/16/05	12/16/05	EPA 8021B	
Toluene	0.0307	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.0253	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.120	0.0250	"	"	"	"	"	"	
Xylene (o)	0.0269	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		84.0 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		114 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	J [6.62]	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	J
Diesel Range Organics >C12-C35	23.6	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	23.6	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		104 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		121 %	70-130		"	"	"	"	
<b>HA-5 0-1' (5L16002-09) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		106 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		117 %	70-130		"	"	"	"	
<b>HA-6 0-1' (5L16002-10) Soil</b>									
Gasoline Range Organics C6-C12	15.0	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	21100	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	21100	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		16.9 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		15.9 %	70-130		"	"	"	"	S-06

Environmental Lab of Texas

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Page 3 of 13

Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

## Organics by GC Environmental Lab of Texas

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-7 0-1' (5L16002-11) Soil</b>									
Benzene	ND	0.0250	mg/kg dry	25	EL51627	12/16/05	12/18/05	EPA 8021B	
Toluene	0.0495	0.0250	"	"	"	"	"	"	
Ethylbenzene	0.192	0.0250	"	"	"	"	"	"	
Xylene (p/m)	0.381	0.0250	"	"	"	"	"	"	
Xylene (o)	0.361	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		114 %	80-120		"	"	"	"	
Surrogate: 4-Bromofluorobenzene		140 %	80-120		"	"	"	"	S-04
Gasoline Range Organics C6-C12	1010	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	21100	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	22100	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		17.8 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		6.52 %	70-130		"	"	"	"	S-06
<b>HA-8 0-1' (5L16002-12) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		96.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		91.0 %	70-130		"	"	"	"	
<b>HA-9 0-1' (5L16002-13) Soil</b>									
Gasoline Range Organics C6-C12	ND	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	ND	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	ND	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		92.8 %	70-130		"	"	"	"	
Surrogate: 1-Chlorooctadecane		88.4 %	70-130		"	"	"	"	
<b>HA-10 0-1' (5L16002-14) Soil</b>									
Benzene	7.58	0.200	mg/kg dry	200	EL51627	12/16/05	12/16/05	EPA 8021B	
Toluene	36.3	0.200	"	"	"	"	"	"	
Ethylbenzene	46.7	0.200	"	"	"	"	"	"	
Xylene (p/m)	56.1	0.200	"	"	"	"	"	"	
Xylene (o)	20.5	0.200	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		908 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		137 %	80-120		"	"	"	"	S-04
Gasoline Range Organics C6-C12	6600	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	15200	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	21800	10.0	"	"	"	"	"	"	

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-10 0-1' (5L16002-14) Soil</b>									
Surrogate: 1-Chlorooctane		49.6 %	70-130		EL51626	12/16/05	12/19/05	EPA 8015M	S-06
Surrogate: 1-Chlorooctadecane		64.8 %	70-130		"	"	"	"	S-06
<b>HA-11 0-1' (5L16002-15) Soil</b>									
Benzene	0.0353	0.0250	mg/kg dry	25	EL51627	12/16/05	12/16/05	EPA 8021B	
Toluene	0.544	0.0250	"	"	"	"	"	"	
Ethylbenzene	1.46	0.0250	"	"	"	"	"	"	
Xylene (p/m)	2.89	0.0250	"	"	"	"	"	"	
Xylene (o)	1.80	0.0250	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		156 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		170 %	80-120		"	"	"	"	S-04
Gasoline Range Organics C6-C12	2840	10.0	mg/kg dry	1	EL51626	12/16/05	12/19/05	EPA 8015M	
Diesel Range Organics >C12-C35	30400	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	33200	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		31.6 %	70-130		"	"	"	"	S-06
Surrogate: 1-Chlorooctadecane		12.3 %	70-130		"	"	"	"	S-06
<b>HA-12 0-1' (5L16002-16) Soil</b>									
Benzene	0.166	0.100	mg/kg dry	100	EL51627	12/16/05	12/18/05	EPA 8021B	
Toluene	3.33	0.100	"	"	"	"	"	"	
Ethylbenzene	11.6	0.100	"	"	"	"	"	"	
Xylene (p/m)	16.1	0.100	"	"	"	"	"	"	
Xylene (o)	6.44	0.100	"	"	"	"	"	"	
Surrogate: a,a,a-Trifluorotoluene		206 %	80-120		"	"	"	"	S-04
Surrogate: 4-Bromofluorobenzene		110 %	80-120		"	"	"	"	
Gasoline Range Organics C6-C12	2310	10.0	mg/kg dry	1	EL51626	12/16/05	12/18/05	EPA 8015M	
Diesel Range Organics >C12-C35	7760	10.0	"	"	"	"	"	"	
Total Hydrocarbon C6-C35	10100	10.0	"	"	"	"	"	"	
Surrogate: 1-Chlorooctane		188 %	70-130		"	"	"	"	S-04
Surrogate: 1-Chlorooctadecane		242 %	70-130		"	"	"	"	S-04

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-1 0-1' (5L16002-01) Soil</b>									
Chloride	18.3	5.00	mg/kg	10	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	9.6	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-2 0-1' (5L16002-04) Soil</b>									
Chloride	34.3	5.00	mg/kg	10	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	10.4	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-3 0-1' (5L16002-05) Soil</b>									
Chloride	242	10.0	mg/kg	20	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	14.7	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-4 0-1' (5L16002-06) Soil</b>									
Chloride	676	20.0	mg/kg	40	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	15.7	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-4 1-2' (5L16002-07) Soil</b>									
Chloride	957	20.0	mg/kg	40	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	13.8	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-4 2-3' (5L16002-08) Soil</b>									
Chloride	888	20.0	mg/kg	40	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	14.5	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-5 0-1' (5L16002-09) Soil</b>									
Chloride	17.6	5.00	mg/kg	10	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	8.7	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-6 0-1' (5L16002-10) Soil</b>									
Chloride	1130	20.0	mg/kg	40	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	7.0	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**General Chemistry Parameters by EPA / Standard Methods**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method	Notes
<b>HA-7 0-1' (5L16002-11) Soil</b>									
Chloride	444	10.0	mg/kg	20	EL52102	12/20/05	12/21/05	EPA 300.0	
% Moisture	12.3	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-8 0-1' (5L16002-12) Soil</b>									
Chloride	24.6	5.00	mg/kg	10	EL52103	12/20/05	12/21/05	EPA 300.0	
% Moisture	7.8	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-9 0-1' (5L16002-13) Soil</b>									
Chloride	25.9	5.00	mg/kg	10	EL52103	12/20/05	12/21/05	EPA 300.0	
% Moisture	8.4	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-10 0-1' (5L16002-14) Soil</b>									
Chloride	24.8	5.00	mg/kg	10	EL52103	12/20/05	12/21/05	EPA 300.0	
% Moisture	14.0	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-11 0-1' (5L16002-15) Soil</b>									
Chloride	266	10.0	mg/kg	20	EL52103	12/20/05	12/21/05	EPA 300.0	
% Moisture	13.1	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	
<b>HA-12 0-1' (5L16002-16) Soil</b>									
Chloride	79.5	5.00	mg/kg	10	EL52103	12/20/05	12/21/05	EPA 300.0	
% Moisture	8.3	0.1	%	1	EL51902	12/16/05	12/19/05	% calculation	

Environmental Lab of Texas

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL51626 - Solvent Extraction (GC)**

**Blank (EL51626-BLK1)**

Prepared: 12/16/05 Analyzed: 12/18/05

Gasoline Range Organics C6-C12	ND	10.0	mg/kg wet							
Diesel Range Organics >C12-C35	ND	10.0	"							
Total Hydrocarbon C6-C35	ND	10.0	"							
Surrogate: 1-Chlorooctane	49.8		mg/kg	50.0		99.6	70-130			
Surrogate: 1-Chlorooctadecane	50.9		"	50.0		102	70-130			

**LCS (EL51626-BS1)**

Prepared: 12/16/05 Analyzed: 12/18/05

Gasoline Range Organics C6-C12	430	10.0	mg/kg wet	500		86.0	75-125			
Diesel Range Organics >C12-C35	474	10.0	"	500		94.8	75-125			
Total Hydrocarbon C6-C35	904	10.0	"	1000		90.4	75-125			
Surrogate: 1-Chlorooctane	53.3		mg/kg	50.0		107	70-130			
Surrogate: 1-Chlorooctadecane	57.7		"	50.0		115	70-130			

**Calibration Check (EL51626-CCV1)**

Prepared: 12/16/05 Analyzed: 12/18/05

Gasoline Range Organics C6-C12	448		mg/kg	500		89.6	80-120			
Diesel Range Organics >C12-C35	492		"	500		98.4	80-120			
Total Hydrocarbon C6-C35	940		"	1000		94.0	80-120			
Surrogate: 1-Chlorooctane	55.4		"	50.0		111	70-130			
Surrogate: 1-Chlorooctadecane	57.5		"	50.0		115	70-130			

**Matrix Spike (EL51626-MS1)**

Source: 5L16007-01

Prepared: 12/16/05 Analyzed: 12/18/05

Gasoline Range Organics C6-C12	509	10.0	mg/kg dry	599	ND	85.0	75-125			
Diesel Range Organics >C12-C35	604	10.0	"	599	ND	101	75-125			
Total Hydrocarbon C6-C35	1110	10.0	"	1200	ND	92.5	75-125			
Surrogate: 1-Chlorooctane	54.3		mg/kg	50.0		109	70-130			
Surrogate: 1-Chlorooctadecane	58.8		"	50.0		118	70-130			

**Matrix Spike Dup (EL51626-MSD1)**

Source: 5L16007-01

Prepared: 12/16/05 Analyzed: 12/18/05

Gasoline Range Organics C6-C12	516	10.0	mg/kg dry	599	ND	86.1	75-125	1.37	20	
Diesel Range Organics >C12-C35	566	10.0	"	599	ND	94.5	75-125	6.50	20	
Total Hydrocarbon C6-C35	1080	10.0	"	1200	ND	90.0	75-125	2.74	20	
Surrogate: 1-Chlorooctane	58.9		mg/kg	50.0		118	70-130			
Surrogate: 1-Chlorooctadecane	58.5		"	50.0		117	70-130			

Environmental Lab of Texas

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL51627 - EPA 5030C (GC)**

**Blank (EL51627-BLK1)**

Prepared & Analyzed: 12/16/05

Benzene	ND	0.0250	mg/kg wet							
Toluene	ND	0.0250	"							
Ethylbenzene	ND	0.0250	"							
Xylene (p/m)	ND	0.0250	"							
Xylene (o)	ND	0.0250	"							
Surrogate: a,a,a-Trifluorotoluene	35.2		ug/kg	40.0		88.0	80-120			
Surrogate: 4-Bromofluorobenzene	41.1		"	40.0		103	80-120			

**LCS (EL51627-BS1)**

Prepared & Analyzed: 12/16/05

Benzene	0.0434	0.00100	mg/kg wet	0.0500		86.8	80-120			
Toluene	0.0528	0.00100	"	0.0500		106	80-120			
Ethylbenzene	0.0580	0.00100	"	0.0500		116	80-120			
Xylene (p/m)	0.119	0.00100	"	0.100		119	80-120			
Xylene (o)	0.0595	0.00100	"	0.0500		119	80-120			
Surrogate: a,a,a-Trifluorotoluene	36.6		ug/kg	40.0		91.5	80-120			
Surrogate: 4-Bromofluorobenzene	45.6		"	40.0		114	80-120			

**Calibration Check (EL51627-CCV1)**

Prepared: 12/16/05 Analyzed: 12/17/05

Benzene	0.0416		mg/kg wet	0.0500		83.2	80-120			
Toluene	0.0461		"	0.0500		92.2	80-120			
Ethylbenzene	0.0441		"	0.0500		88.2	80-120			
Xylene (p/m)	0.0896		"	0.100		89.6	80-120			
Xylene (o)	0.0453		"	0.0500		90.6	80-120			
Surrogate: a,a,a-Trifluorotoluene	35.1		ug/kg	40.0		87.8	80-120			
Surrogate: 4-Bromofluorobenzene	33.4		"	40.0		83.5	80-120			

**Matrix Spike (EL51627-MS1)**

Source: 5L16007-06

Prepared: 12/16/05 Analyzed: 12/17/05

Benzene	1.12	0.0250	mg/kg dry	1.38	ND	81.2	80-120			
Toluene	1.34	0.0250	"	1.38	0.0132	96.1	80-120			
Ethylbenzene	1.46	0.0250	"	1.38	0.0173	105	80-120			
Xylene (p/m)	2.90	0.0250	"	2.76	0.0475	103	80-120			
Xylene (o)	1.43	0.0250	"	1.38	ND	104	80-120			
Surrogate: a,a,a-Trifluorotoluene	35.0		ug/kg	40.0		87.5	80-120			
Surrogate: 4-Bromofluorobenzene	50.5		"	40.0		126	80-120			

S-04

Environmental Lab of Texas

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Larson & Associates, Inc.  
P.O. Box 50685  
Midland TX, 79710

Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**Organics by GC - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL51627 - EPA 5030C (GC)**

**Matrix Spike Dup (EL51627-MSD1)**

Source: 5L16007-06

Prepared: 12/16/05

Analyzed: 12/17/05

Benzene	1.13	0.0250	mg/kg dry	1.38	ND	81.9	80-120	0.858	20	
Toluene	1.31	0.0250	"	1.38	0.0132	94.0	80-120	2.21	20	
Ethylbenzene	1.49	0.0250	"	1.38	0.0173	107	80-120	1.89	20	
Xylene (p/m)	2.99	0.0250	"	2.76	0.0475	107	80-120	3.81	20	
Xylene (o)	1.43	0.0250	"	1.38	ND	104	80-120	0.00	20	
Surrogate: a,a,a-Trifluorotoluene	38.4		ug/kg	40.0		96.0	80-120			
Surrogate: 4-Bromofluorobenzene	42.8		"	40.0		107	80-120			

Environmental Lab of Texas

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Larson & Associates, Inc.  
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Project: Cardinal #1  
Project Number: 5-0129  
Project Manager: Mark Larson

Fax: (432) 687-0456

Reported:  
12/21/05 08:50

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL51902 - General Preparation (Prep)**

**Blank (EL51902-BLK1)** Prepared: 12/16/05 Analyzed: 12/19/05

% Solids 100 %

**Duplicate (EL51902-DUP1)** Source: 5L16001-01 Prepared: 12/16/05 Analyzed: 12/19/05

% Solids 96.5 % 95.8 0.728 20

**Duplicate (EL51902-DUP2)** Source: 5L16002-09 Prepared: 12/16/05 Analyzed: 12/19/05

% Solids 90.7 % 91.3 0.659 20

**Duplicate (EL51902-DUP3)** Source: 5L16007-03 Prepared: 12/16/05 Analyzed: 12/19/05

% Solids 91.8 % 91.7 0.109 20

**Batch EL52102 - Water Extraction**

**Blank (EL52102-BLK1)** Prepared: 12/20/05 Analyzed: 12/21/05

Chloride ND 0.500 mg/kg

**LCS (EL52102-BS1)** Prepared: 12/20/05 Analyzed: 12/21/05

Chloride 8.33 mg/L 10.0 83.3 80-120

**Calibration Check (EL52102-CCV1)** Prepared: 12/20/05 Analyzed: 12/21/05

Chloride 8.46 mg/L 10.0 84.6 80-120

**Duplicate (EL52102-DUP1)** Source: 5L15002-01 Prepared: 12/20/05 Analyzed: 12/21/05

Chloride 94.9 5.00 mg/kg 92.0 3.10 20

**Batch EL52103 - Water Extraction**

**Blank (EL52103-BLK1)** Prepared: 12/20/05 Analyzed: 12/21/05

Chloride ND 0.500 mg/kg

Larson & Associates, Inc.  
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Midland TX, 79710

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Reported:  
12/27/05 11:20

**General Chemistry Parameters by EPA / Standard Methods - Quality Control**  
**Environmental Lab of Texas**

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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**Batch EL52103 - Water Extraction**

**LCS (EL52103-BS1)**

Prepared: 12/20/05 Analyzed: 12/21/05

Chloride	8.22		mg/L	10.0		82.2	80-120			
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**Calibration Check (EL52103-CCV1)**

Prepared: 12/20/05 Analyzed: 12/21/05

Chloride	8.35		mg/L	10.0		83.5	80-120			
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**Duplicate (EL52103-DUP1)**

Source: 5L20004-01

Prepared: 12/20/05 Analyzed: 12/21/05

Chloride	391	5.00	mg/kg		418			6.67	20	
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Reported:  
12/21/05 08:50

### Notes and Definitions

S-06 The recovery of this surrogate is outside control limits due to sample dilution required from high analyte concentration and/or matrix interference's.

S-04 The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

J Detected but below the Reporting Limit; therefore, result is an estimated concentration (CLP J-Flag).

DET Analyte DETECTED

ND Analyte NOT DETECTED at or above the reporting limit

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. Tuttle

Date:

12-27-05

Raland K. Tuttle, Lab Manager  
Celey D. Keene, Lab Director, Org. Tech Director  
Peggy Allen, QA Officer

Jeanne Mc Murrey, Inorg. Tech Director  
LaTasha Cornish, Chemist  
Sandra Sanchez, Lab Tech.

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Environmental Lab of Texas

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# Environmental Lab of Texas

12600 West I-20 East  
Odessa, Texas 79765

Phone: 432-563-1800  
Fax: 432-563-1713

## CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: Mark Larson

Company Name

Larson and Associates, Inc.

Company Address:

507 N. Marion Street, Ste 202

City/State/Zip:

Midland, TX 79701

Telephone No:

(432) 687-0901

Fax No:

(432) 687-0456

Sampler Signature:

[Signature]

Email:

Mark@LarsonEnvironmental.com

Project Name:

Cardinal #1

Project #:

5-0129

Project Loc:

Lea County, NM

PO #:

Page 1 of 2

LAB # (lab use only)	FIELD CODE	Date Sampled	Time Sampled	No. of Containers	Preservative										Matrix										Analyze For:																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
					HNO <sub>3</sub>	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub>	None	Other (Specify)	Water	Sludge	Soil	Other (specify):	TPH: 418, 18015M 1005 1006	Cations (Ca, Mg, Na, K)	Anions (SO <sub>4</sub> , CO <sub>3</sub> , HCO <sub>3</sub> )	SAR / ESP / CEC	Metals: As Ag Ba Cd Cr Pb Hg Se	Volatiles	Semivolatiles	BTEX 8021B 5030 or BTEX 8260	RCI	N.O.R.M.	Standard TAT																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Special Instructions:

Relinquished by:

[Signature]

Date

12/15/05

Received by:

Steve Walker

Date

12/15

Time

3:00

Relinquished by:

[Signature]

Date

12/15

Received by ELOT:

Carrie Jolly

Date

12/15/05

Time

4:50

Sample Containers Intact?

Y ☒ N ☒

Labels on container?

Y ☒ N ☒

Custody Seals: Containers / Cooler

Y ☒ N ☒

Temperature Upon Receipt:

2.5°C

Laboratory Comments:

402

### CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST

**112600 West I-20 East  
Odessa, Texas 79765**

Mark Larson

Larsen and Olinstein Inc.

507 N. Marienged bt, but 202

Thailand, T x 79701

687-0456

⑤

mark @ LAenvironmental

Sampler Signature: _____		Email: <u>mark @ LAenvironmental</u>		Analyze For:	
LAB # (lab use only)		FIELD CODE	Date Sampled	Time Sampled	No. of Containers
116002	14A-7, 0-1'	12-15-05	13:00	1	
12	14A-8, 0-1'	"	13:05	1	
13	14A-9, 0-1'	"	13:12	1	
14	14A-10, 0-1'	"	13:15	1	
15	14A-11, 0-1'	"	13:30	1	
16	14A-12, 0-1'	"	13:42	1	

Special Instructions:		Received by: <u>Steve</u>		Date: 12/15/05	Time: 3:00
Relinquished by: _____		Received by ELOT: <u>Clean 1008</u>		Date: 12/15/05	Time: 4:50

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

Sample Containers Intact?		Laboratory Comments:	
Y	N	402	
Y	N	2.5'c	

|--|--|

# Environmental Lab of Texas

## Variance / Corrective Action Report – Sample Log-In

Client: Larson

Date/Time: 12/15/05 9:50

Order #: 5L160

Initials: UK

### Sample Receipt Checklist

Temperature of container/cooler?	Yes	No	<u>2.5</u> C
Shipping container/cooler in good condition?	<input checked="" type="checkbox"/>	No	
Custody Seals intact on shipping container/cooler?	Yes	No	<del>Not present</del>
Custody Seals intact on sample bottles?	Yes	No	<del>Not present</del>
Chain of custody present?	<input checked="" type="checkbox"/>	No	
Sample Instructions complete on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Chain of Custody signed when relinquished and received?	<input checked="" type="checkbox"/>	No	
Chain of custody agrees with sample label(s)	Yes	No	<u>ID on lid *</u>
Container labels legible and intact?	Yes	No	<u>n/a</u>
Sample Matrix and properties same as on chain of custody?	<input checked="" type="checkbox"/>	No	
Samples in proper container/bottle?	<input checked="" type="checkbox"/>	No	
Samples properly preserved?	<input checked="" type="checkbox"/>	No	
Sample bottles intact?	<input checked="" type="checkbox"/>	No	
Preservations documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Containers documented on Chain of Custody?	<input checked="" type="checkbox"/>	No	
Sufficient sample amount for indicated test?	<input checked="" type="checkbox"/>	No	
All samples received within sufficient hold time?	<input checked="" type="checkbox"/>	No	
VOC samples have zero headspace?	<input checked="" type="checkbox"/>	No	Not Applicable

Other observations:

\* sample time discrepancy on HA-601 See attached e-mail

### Variance Documentation:

Contact Person: - Mark Larson Date/Time: 12-16-05 @ 0943 Contacted by: Jeanne McManus

Regarding:

\* see above

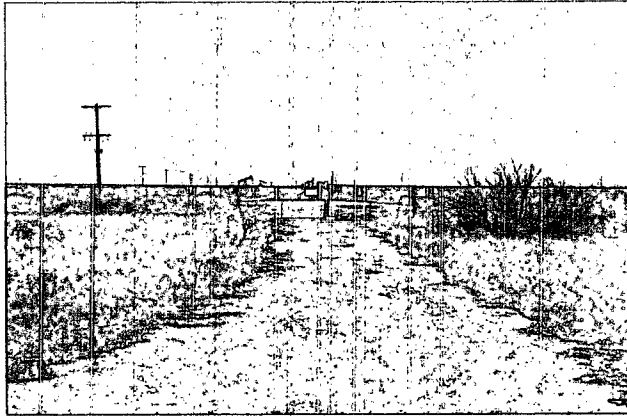
Corrective Action Taken:

\* see attached e-mail  
reference COC time

## **Appendix B**

### **Photographs**

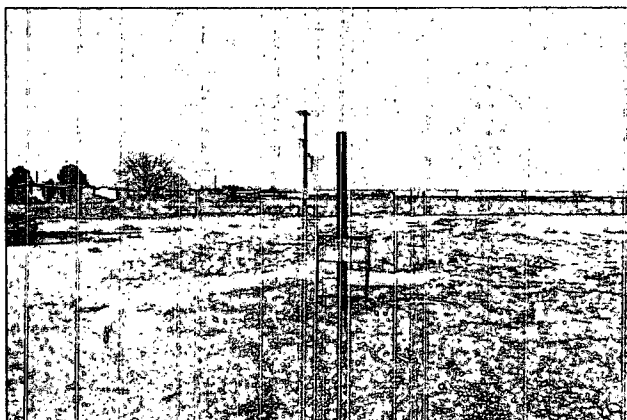
CARDINAL # 1  
UL G, (SW/NW), SECTION 27, T-19-S, R-38-E  
LEA COUNTY, NEW MEXICO



1. Cardinal #1 - Entrance Near  
Northwest Corner of Location

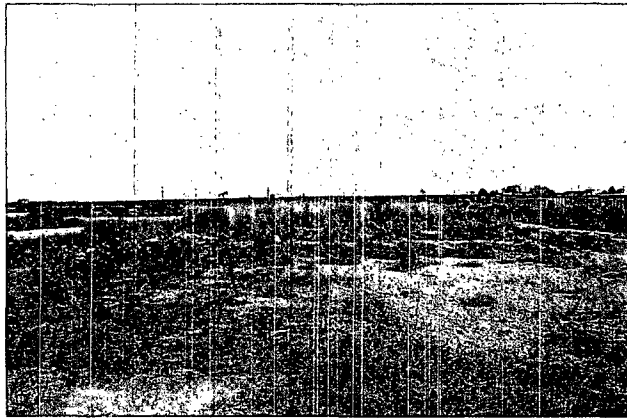


2. Cardinal #1 Well Sign

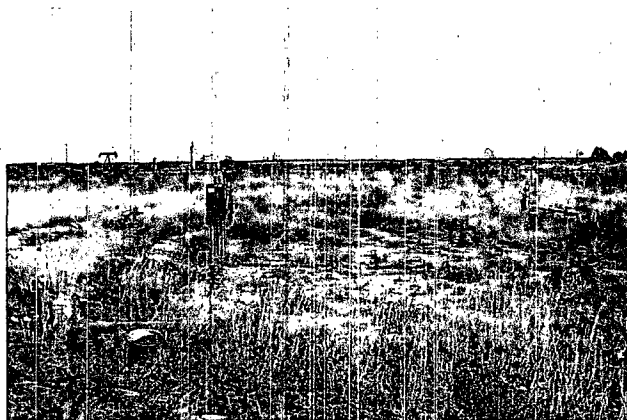


3. Cardinal #1 Well Location

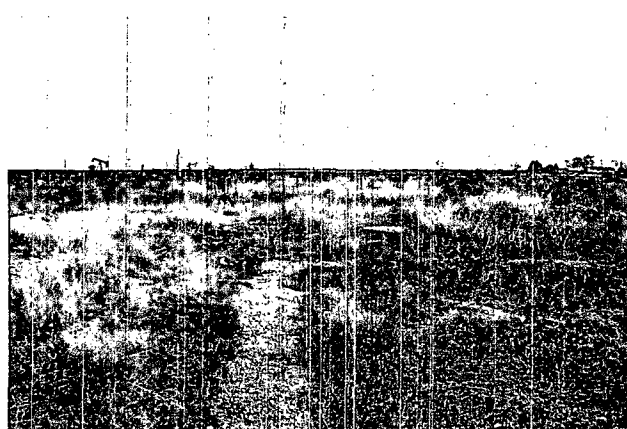
**CARDINAL # 1**  
**UL G, (SW/NW), SECTION 27, T-19-S, R-38-E**  
**LEA COUNTY, NEW MEXICO**



**4. Cardinal #1 - Tank Battery  
Location**

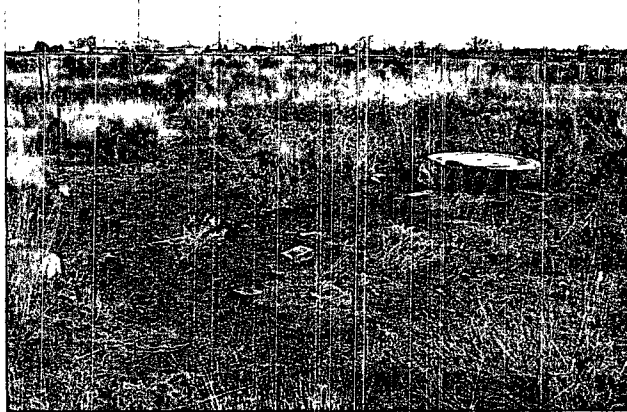


**5. Cardinal #1 - Circulating Pump and  
Gas Meter**



**6. Cardinal #1 - Separation  
Equipment Area**

CARDINAL # 1  
UL G, (SW/NW), SECTION 27, T-19-S, R-38-E  
LEA COUNTY, NEW MEXICO



7. Cardinal #1 - Soil Staining at  
Separation Equipment Area