

1R -

340

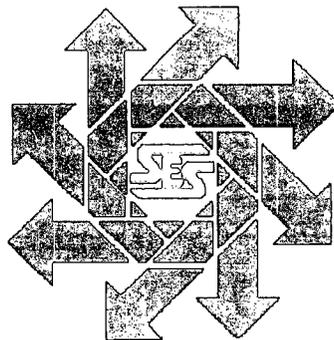
REPORTS

DATE:

2002

**Chevron USA
CDU Tract 19
Remediation/Cleanup Work Plan
Lea County, New Mexico**

May 24, 2002



RECEIVED
JUN 10 2002
Environmental Bureau
Oil Conservation Division

Prepared for:

**Chevron USA
Permian Basin Business Unit
P.O. Box 1949
Eunice, New Mexico 88231**

By:

***Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 102
Hobbs, New Mexico 88240
(505) 397-0510***

TABLE OF CONTENTS

Purpose..... 1

Background 1

Contaminant and Size of Area 1

Vertical and Horizontal Extent of Contamination..... 1

Groundwater..... 1

Action Plan..... 2

Maps and Figures..... 2

I. Purpose

The purpose of this work plan is to propose a plan for the cleanup of the area identified by the Site Investigation of the CDU Tract 19 dated February 9, 2001. The site is located in Unit J, Section 29, T21S, R37E in Lea County, New Mexico. This plan will allow closure in a manner that will protect the population, environment and groundwater of the area surrounding the subject location. The site is situated on a relatively level site. (Vicinity Map)

II. Background

The subject site is a suspected pit area, which has been used for various purposes by previous owner since the late 1940s. Aerial photographs of the subject site reveal activity at the site from 1949 through at least 1977.

III. Contaminant and Size of Area

The suspected contaminant is crude oil and produced water associated with the tank battery at the site. The approximate size of the total fenced area surrounding the pit is 53,000 sq. ft. The estimated square footage of hydrocarbon and produced water contamination is reported separately in the February 9 Site Investigation (Site Plan). The crude oil and produced water is considered exempt oilfield waste. No evidence of other contaminants was observed.

IV. Vertical and Horizontal Extent of Contamination

The vertical and horizontal extent of the contamination has been performed and reported in the February 9 Site Investigation.

V. Groundwater

The monitor well installed at the subject site was completed to a depth of 104.10 below the top of casing (BTOC) and contains groundwater standing in the casing at 93.11 ft. BTOC. The top of casing is approximately 3 ft. above ground level.

VI. Action Plan

Closure

The site will be excavated both horizontally and vertically for the removal of the highly contaminated and/ or saturated soils. Highly contaminated and/or saturated soils is defined in the, New Mexico Oil Conservation Division's '*Unlined Surface Impoundment Closure Guidelines*', February 1993 in Section III (A) (1.) and for the purposes of this site is considered to be soils with THP levels above 25,000 ppm. The Site Investigation dated February 9, 2001 revealed the highly contaminated and/or saturated soils to be removed are approximately 3,000 - 4,000 cubic yards. The excavated soils will be transported to the Chevron Texaco landfarm near Jal, New Mexico for remediation.

An impermeable liner of 20-millimeter plastic will be installed in the bottom of the convex in a manner so that any downward infiltrating water will be diverted to the side edges of the liner. This type of installation will prevent ponding of water on top of the liner and minimize any downward migration of water due to inadvertent puncturing of the liner. The top of the liner will be approximately 10 feet below the surface of the area. Any clean soil excavated to facilitate liner installation may be stockpiled on site for later backfill. The liner and placement of clean backfill will greatly minimize if not eliminate human exposure to organic constituents from any of the exposure pathways listed in the Site Investigation. The surface will be returned to its natural contour and seeded.

The bottom and sides of the excavation will be sampled at the final excavation depths. These samples will be tested for TPH, BTEX and Chlorides with a third party laboratory for confirmation and documentation of any contamination levels left in place.

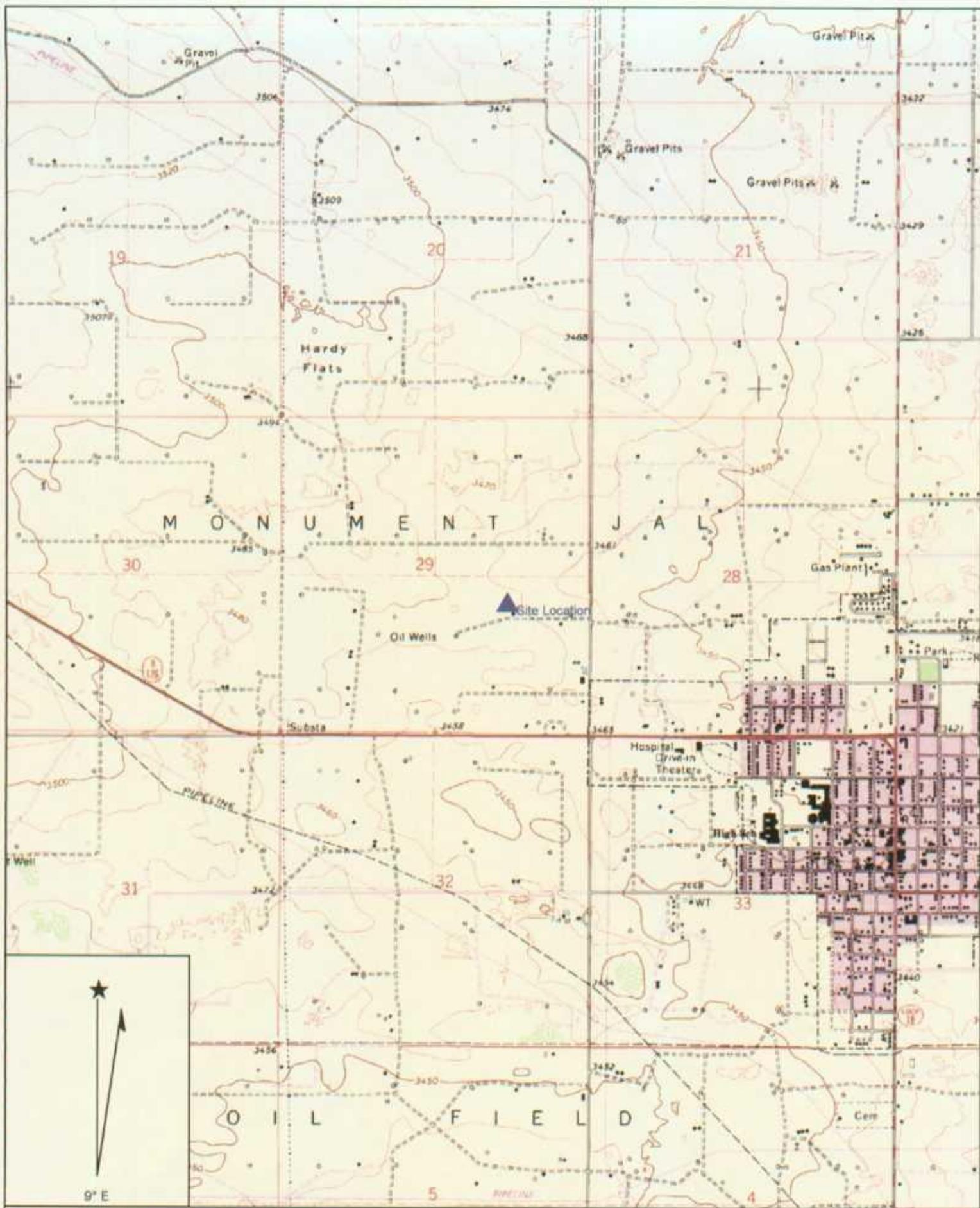
After completion of the project, the appropriate reports will be filed with the NMOCD in the closure report.

VII. Maps and Figures

Figure 1. Vicinity Map

Figure 2. Site Plan (Location of Boreholes & Monitor Well)

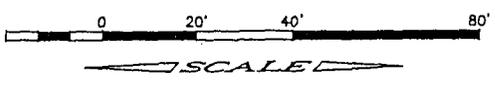
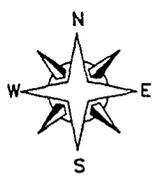
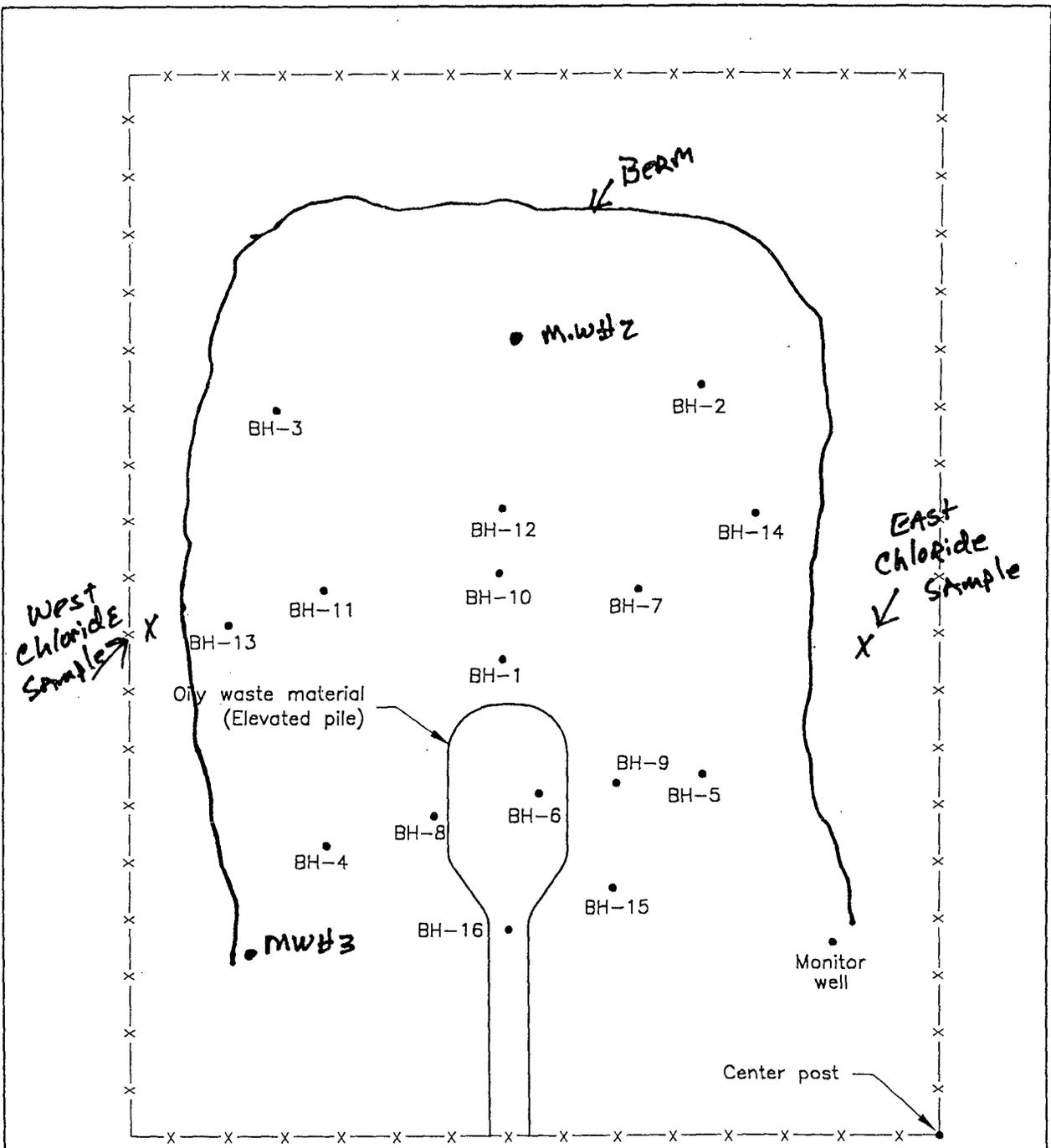
Figure 1
Vicinity Map



Name: EUNICE
 Date: 6/7/2002
 Scale: 1 inch equals 2105 feet

Location: 032° 26' 53.6" N 103° 10' 53.0" W
 Caption: Chevron CDU Tract 19

Figure 2
Site Plan
(Location of Boreholes & Monitor Well)

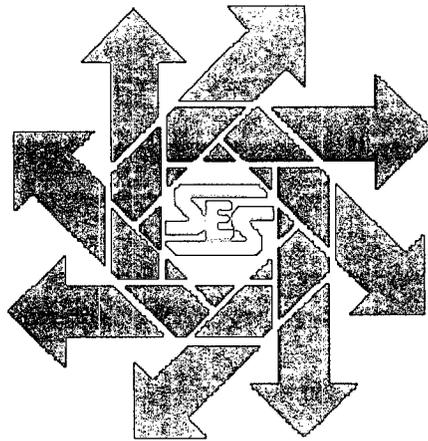


DRAWING TITLE			
FIGURE 2 LOCATION OF SOIL BORINGS AND MONITOR WELL, CHEVRON CDU TRACT 19, EUNICE, NEW MEXICO			
DRAWN BY	CHK'D BY	SCALE	
EJS	DB	1" = 40'	
DATE	APPR BY	DRAWING NUMBER	REV.
02-14-01	-	CHEV01.DWG	0

Safety & Environmental Solutions, Inc.

**Chevron USA
Additional Site Investigation
CDU Tract 19
Lea County, New Mexico**

May 25, 2002



RECEIVED
JUN 10 2002
Environmental Bureau
Oil Conservation Division

Prepared for:

**Chevron USA
P.O. Box 1949
Eunice, New Mexico 88231**

By:

***Safety & Environmental Solutions, Inc.
703 E. Clinton, Suite 102
Hobbs, New Mexico 88240
(505) 397-0510***

TABLE OF CONTENTS

I.	Background	1
II.	Work Performed.....	1
	Installation of Groundwater Monitor Wells.....	1
	Background Chloride Soil Samples.....	2
III.	Results of Groundwater Testing	2
	Groundwater Sampling Results.....	2
	Background Soil Sampling Results.....	3
IV.	Conclusions and Recommendations	3
V.	Report Figures.....	3
	Figure 1. – Water Level Contour Maps 4/18/02 and 5/3/02.....	3
VI.	Report Appendices	3
	Appendix A. Plat of Location.....	3
	Appendix B. Laboratory Analytical Reports – Groundwater.....	3
	Appendix C. Laboratory Analytical Reports - Soil.....	3

LIST OF TABLES

Table 1. Groundwater Sampling Result, CDU Tract 19 Site Investigation, Lea County, New Mexico	2
Table 2. Background Chloride Soil Sampling Results, CDU Tract 19 Site Investigation, Lea County, New Mexcio.....	3

I. Background

An ongoing investigation of the site known as the CDU Tract 19 is being conducted on behalf of Chevron USA by Safety & Environmental Solutions, Inc. (SESI). Additional investigation was conducted upon approval by the New Mexico Oil Conservation Division from Mr. Wayne Price on January 22, 2002.

The purpose of this stage of the investigation is to determine the direction of groundwater flow beneath the subject site and to determine the concentrations of any contaminants in the groundwater.

II. Work Performed

Installation of Groundwater Monitor Wells

On April 15, 2002, SESI engaged Eades Drilling of Hobbs, New Mexico to install two (2) groundwater monitor wells at the subject site. Monitor well # 2 was installed on the north side of the bermed area at the subject site and Monitor well # 3 was installed on the southwest corner of the bermed area at the subject site. The wells were completed on April 16, 2002.

On April 17, 2002, SESI developed Wells 2 and 3. Each well was purged by pumping approximately 20 gallons of water and sand from each well bore.

On April 18, 2002, SESI purged Well # 1 with a hand bailer removing approximately 5 gallons of water. SESI sampled all three wells and delivered the samples along with a Chain of Custody to Cardinal Laboratories for testing. Laboratory samples were analyzed for BTEX (EPA Method SW-846-8260) and Chlorides (EPA Method 600/4-79-020 325.3). Copies of the analytical results are found in Appendix A.

On April 22, 2002, Pettigrew and Associates surveyed the tops of casing a location of the wells and produced a Plat of Location. A copy of the plat is found in Appendix B.

SESI took top of water measurements in all three wells on April 18, and again on May 3, 2002. The measurements are as follows:

Well Name	TOC Elevation (ft.)	Date	Depth to Water (ft.)	Water Level Elevation (ft.)
MW - 1	3,468.72	04/18/02	93.00	3,375.72
		05/03/02	92.99	3,375.73
MW - 2	3,469.91	04/18/02	93.80	3,376.11
		05/03/02	93.80	3,376.11
MW - 3	3470.85	04/18/02	95.00	3,375.85
		05/03/02	95.00	3,375.85

SESI prepared water level contour maps using the data provided Pettigrew and Associates and the water level elevations. Copies of the water level contour maps are found in Figure 1. The direction of the groundwater flow is from the northwest to the southeast beneath the subject site. Monitor well # 2 is almost directly up-gradient of monitor well # 1.

Background Chloride Soil Samples

On April 18, 2002, SESI extracted soil samples from between the berm and fence on the east and west sides of the subject site. Samples were taken with a hand auger and delivered along with a Chain of Custody to Cardinal Laboratories for testing. Laboratory samples were analyzed for Chlorides (EPA Method 4500-ClB). Copies of the analytical results are found in Appendix C.

III. Results of Groundwater Testing

Groundwater Sampling Results

The results for the groundwater sampling are tabulated in Table 1.

The sample results show elevated chloride levels in monitor wells # 1 and 2. The highest chloride level is found in monitor well # 2, which is directly up-gradient of monitor well #1. Monitor well # 2 is also generally up-gradient of the site. The chloride level in monitor well # 3 is only slightly above WQCC standards.

TDS levels in wells # 2 and 1 are also elevated in relation to well #3.

No elevated BTEX levels were observed in any of the three wells.

Table 1. Groundwater Sampling Results, CDU Tract 19 Site Investigation, Lea County, New Mexico

SAMPLE ID	TDS	CL	BENZENE	TOLUENE	ETHYL BENZENE	XYLENES
MW #1	3963	1540	<0.002	<0.002	<0.002	<0.006
MW #2	3415	1240	<0.002	<0.002	<0.002	<0.006
MW #3	1195	296	<0.002	<0.002	<0.002	<0.006

Background Soil Sampling Results

The results of the soil boring samples are tabulated in Table 2.

Table 2. Background Chloride Soil Sampling Results, CDU Tract 19 Site Investigation, Lea County, New Mexico

SAMPLE ID	DEPTH	CL
East Side Berm	5'	944
West Side Berm	5'	150

IV. Conclusions and Recommendations

Results of this investigation indicate elevated levels of chlorides in the up and down gradient wells installed at the subject site (MW-2 and MW-1, respectively). The off gradient well (MW-3) only shows slightly elevated concentrations of chlorides. The near match of concentrations in the up and down gradient wells may indicate that the chloride contamination is migrating beneath the subject site from a source somewhere up-gradient of the site.

The absence of BTEX concentrations in all three wells may indicate that TPH concentrations found on the subject site in previous investigations have not migrated to the groundwater at the time of sampling.

V. Report Figures

Figure 1. – Water Level Contour Maps 4/18/02 and 5/3/02

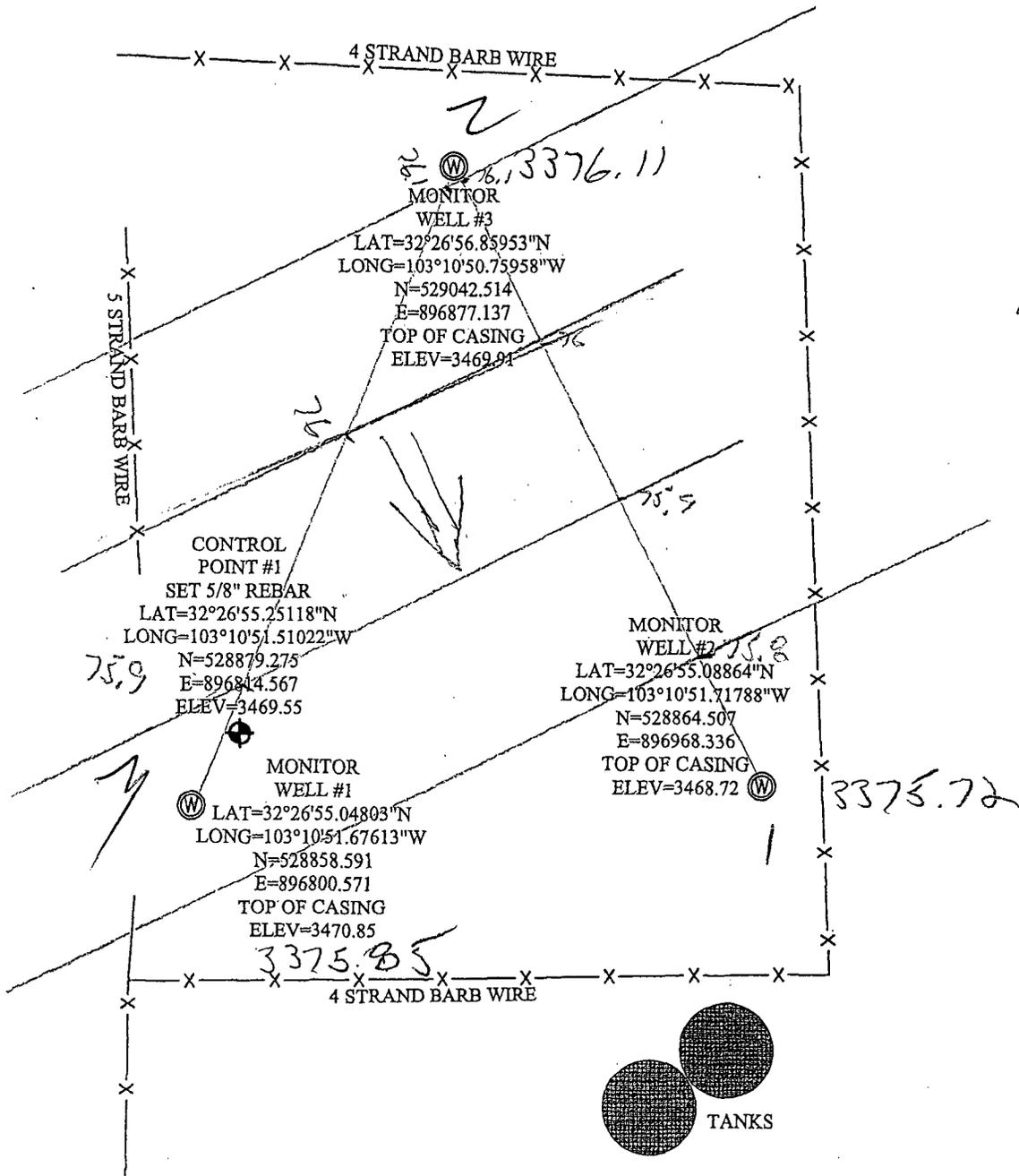
VI. Report Appendices

Appendix A. Plat of Location

Appendix B. Laboratory Analytical Reports – Groundwater

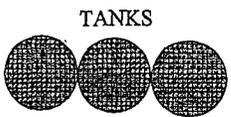
Appendix C. Laboratory Analytical Reports - Soil

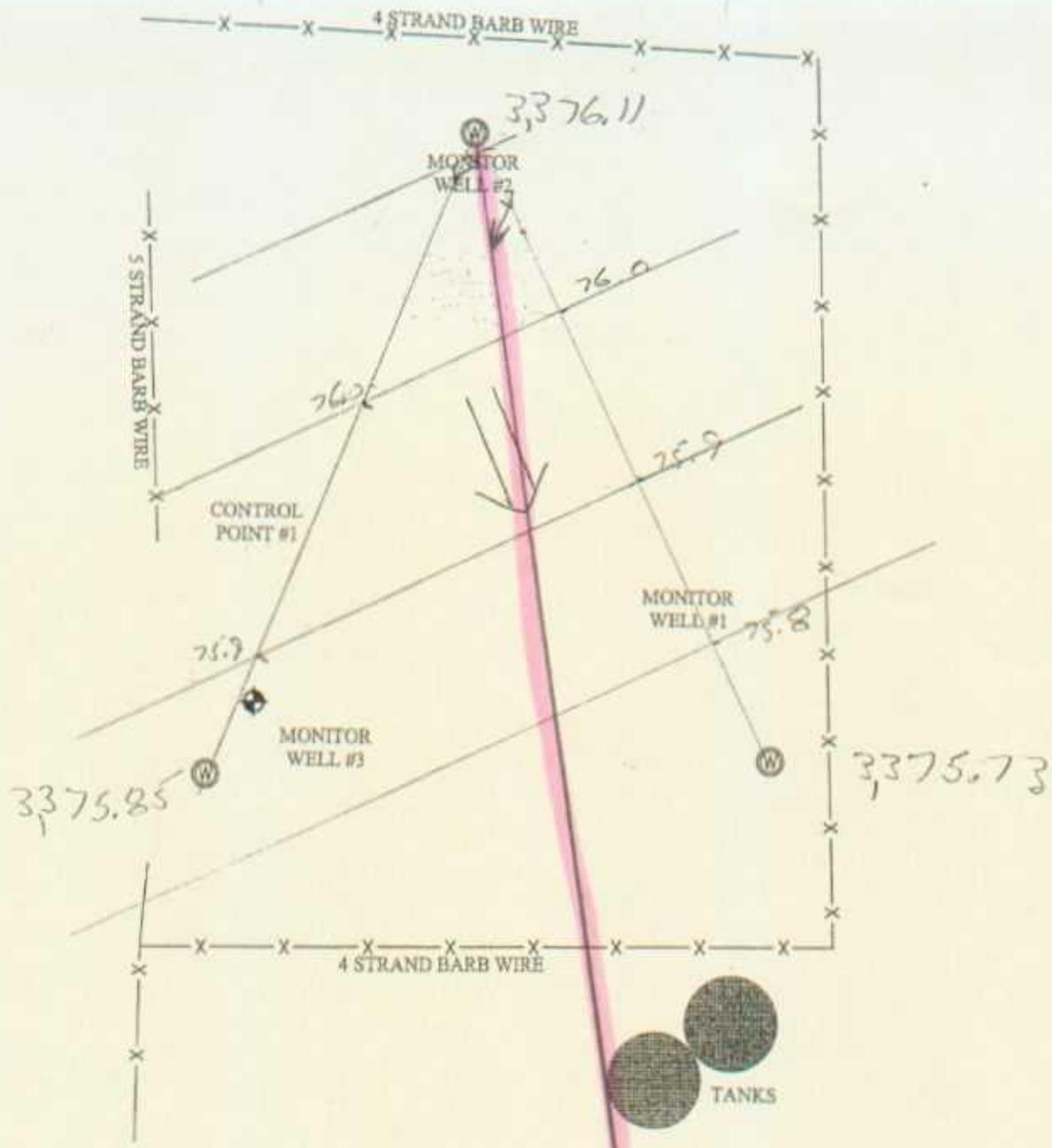
Figure 1.
Water Level Contour Maps
4/18/02
5/3/02



DANIEL R. MUTH
 NEW MEXICO
 13239
 REGISTERED PROFESSIONAL SURVEYOR
 4-30-02

4/18/02

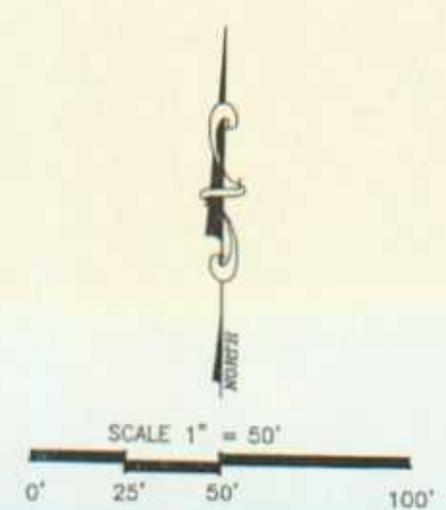




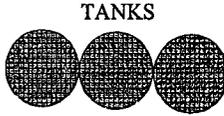
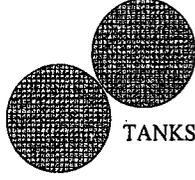
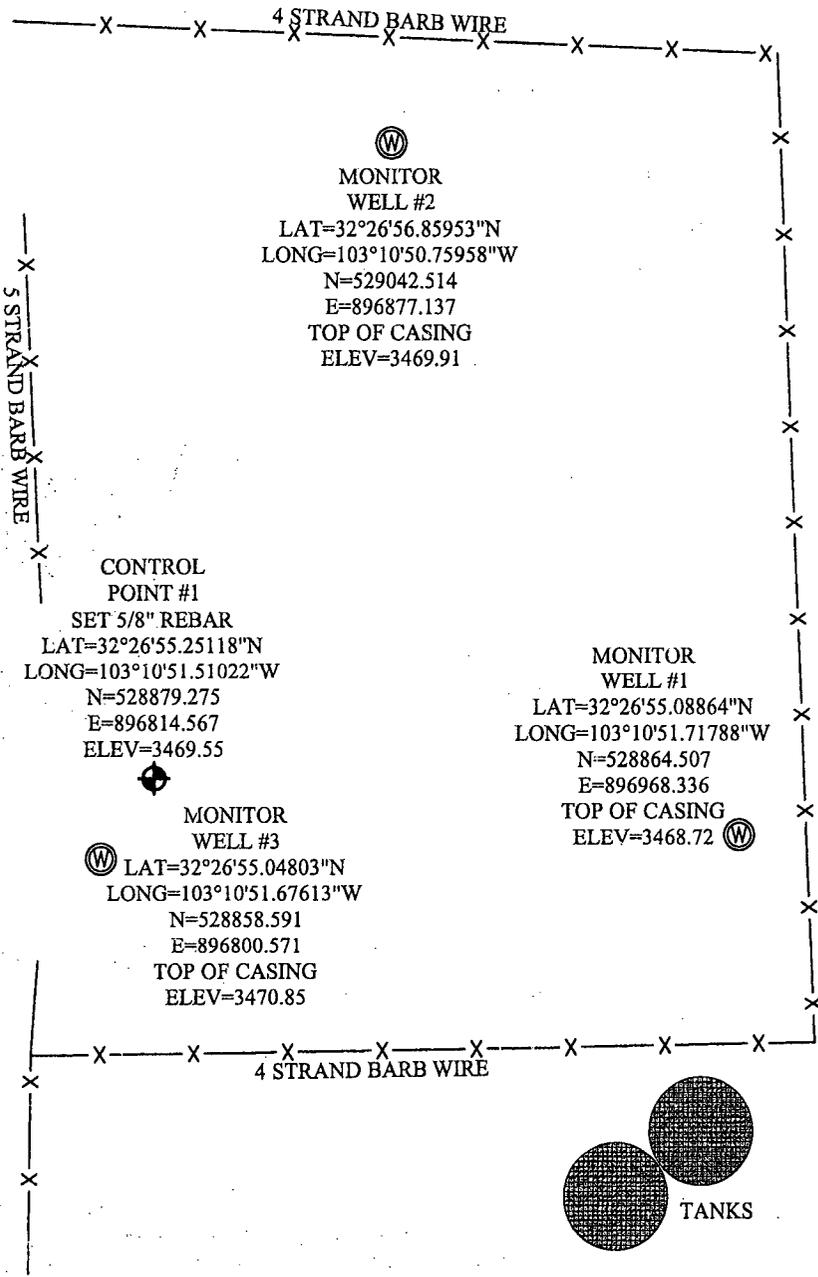
DANIEL R. PUTA
 NEW MEXICO
 13239
 REGISTERED PROFESSIONAL SURVEYOR
 4/30/02

5/3/02

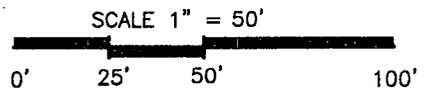
BASIS OF BEARING:
 ALL POSITIONS WERE OBSERVED USING GLOBAL POSITIONING
 SYSTEM TECHNIQUES BASED UPON THE AUTONOMOUS POSITION
 AT CONTROL POINT #1.



Appendix A
Plat of Location



BASIS OF BEARING:
 ALL POSITIONS WERE OBSERVED USING GLOBAL POSITIONING SYSTEM TECHNIQUES BASED UPON THE AUTONOMOUS POSITION AT CONTROL POINT #1.



PETTIGREW AND ASSOCIATES

1110 N. GRIMES HOBBS, N.M. 88240
 (505) 393-9827

INDEXING INFORMATION FOR COUNTY CLERK

OWNER: CHEVRON CDU
 LOC: TRACT #19 OF THE NW1/4 OF THE SE1/4 OF SEC. 29, T21S R37E, N.M.P.M., LEA COUNTY, NEW MEXICO

**PLAT OF LOCATION SURVEY FOR
 Safety & Environmental Solutions
 Monitoring Well Locations**

0	4/23/2002	PLOTTED
00	4/22/2002	PRELIMINARY PLAT
	4/22/2002	DATE OF SURVEY
REV	DATE	DESCRIPTION

PROJ. No.	2002.1049	DRN BY:	D.MUTH
DWG	ACAD SES WELLADWGWELLS.DWG		
BOOK	HOBBS LOCAL #8	SHT.	1 OF 1

Appendix B
Laboratory Analytical Reports
Groundwater



**ARDINAL
LABORATORIES**

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

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

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 04/18/02
Reporting Date: 04/19/02
Project Number: CHE-00-011
Project Name: TRACT 19
Project Location: EUNICE, NM

Sampling Date: 04/18/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	TDS (mg/L)	Cl (mg/L)
ANALYSIS DATE:		04/19/02	04/18/02
H6685-1	MW #1	3963	1540
H6685-2	MW #2	3415	1240
H6685-3	MW #3	1195	296
Quality Control		NR	1000
True Value QC		NR	1000
% Recovery		NR	100
Relative Percent Difference		8.1	4.0
METHODS: EPA 600/4-79-02		160.1	4500-ClB*

*Std. Methods

Amy Hill

Chemist

4-19-02

Date

H6685b
PLEASE NOTE: Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



**ARDINAL
LABORATORIES**

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

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

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 04/18/02
Reporting Date: 04/22/02
Project Number: CHE-00-011
Project Name: TRACT 19
Project Location: EUNICE, NM

Sampling Date: 04/18/02
Sample Type: GROUNDWATER
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: BC

LAB NUMBER	SAMPLE ID	BENZENE (mg/L)	TOLUENE (mg/L)	ETHYL BENZENE (mg/L)	TOTAL XYLENES (mg/L)
ANALYSIS DATE		04/19/02	04/19/02	04/19/02	04/19/02
H6685-1	MW #1	<0.002	<0.002	<0.002	<0.006
H6685-2	MW #2	<0.002	<0.002	<0.002	<0.006
H6685-3	MW #3	<0.002	<0.002	<0.002	<0.006
Quality Control		0.105	0.105	0.107	0.311
True Value QC		0.100	0.100	0.100	0.300
% Recovery		105	105	107	104
Relative Percent Difference		4.9	3.0	4.6	0.4

METHOD: EPA SW-846 8260

Buy...
Chemist

4/22/02
Date

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.



CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

CARDINAL LABORATORIES, INC.

2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
(915) 673-7001 Fax (915) 673-7020 (505) 393-2326 Fax (505) 393-2476

Company Name: SESI		BILL TO PO #:	
Project Manager: Allen		Company: Samuel	
Address: 103 E Clinton		Attn:	
City: Hobbs State: NM Zip: 88240		Address:	
Phone #: 505-397-0510		City:	
Fax #: 505-393-4388		State:	
Project #: CHE-00-011 Project Owner: CHEURON		Phone #:	
Project Name: TRACT 19		Fax #:	
Project Location: EUWICE, NM			
FOR LAB USE ONLY			
LAB I.D.	Sample I.D.	MATRIX	SAMPLING
		WASTEWATER	DATE
		GROUNDWATER	TIME
		SOL	
		OIL	
		SLUDGE	
		OTHER:	
		ACID:	
		ICE/COOL	
		OTHER:	
		PRES.	
		# CONTAINERS	
		(G) RAB OR (C) MP	
H0685-1	MW #1	✓	4-18 11:15
-2	MW #2	✓	4-18 10:40
-3	MW #3	✓	4-18 10:50
-4	EAST SIDE DG	✓	4-18 11:40
-5	WEST SIDE	✓	4-18 11:50

PLEASE NOTE: Liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising whether based in contract or tort, shall be limited to the amount paid by the client for the analyses. All claims including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within 30 days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above stated reasons or otherwise.

Terms and Conditions: Interest will be charged on all accounts more than 30 days past due at the rate of 24% per annum from the original date of invoice, and all costs of collections, including attorney's fees.

Sampler Relinquished: **Allen** Date: **4-18-02** Time: **12:30P**

Relinquished By: **Robert Phuby** Date: **4-18-02** Time: **2:48P**

Delivered By: (Circle One) **Robert Phuby**

Sampler - UPS - Bus - Other: **Other**

Received By: (Lab Staff) **Allen** Checked By: (Initials)

Sample Condition: Cool Intact Yes No

Phone Result Yes No Additional Fax #:

Fax Result: Yes No

REMARKS:

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

Appendix C
Laboratory Analytical Reports
Soil



**ARDINAL
LABORATORIES**

PHONE (915) 673-7001 • 2111 BEECHWOOD • ABILENE, TX 79603

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

ANALYTICAL RESULTS FOR
SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: BOB ALLEN
703 E. CLINTON, STE. 103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 04/18/02
Reporting Date: 04/19/02
Project Number: CHE-00-011
Project Name: TRACT 19
Project Location: EUNICE, NM

Analysis Date: 04/19/02
Sampling Date: 04/18/02
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: AH
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl ⁻ (mg/Kg)
H6685-4	EAST SIDE BG	944
H6685-5	WEST SIDE	150
Quality Control		1000
True Value QC		1000
% Recovery		100
Relative Percent Difference		4.0

METHOD: Standard Methods	4500-ClB
--------------------------	----------

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

Amy Hill
Chemist

4-19-02
Date

H6685a
PLEASE NOTE: Cardinal's liability and Damages. Cardinal's liability and client's exclusive remedy for any claim arising, whether based in contract or tort, shall be limited to the amount paid by client for analyses. All claims, including those for negligence and any other cause whatsoever shall be deemed waived unless made in writing and received by Cardinal within thirty (30) days after completion of the applicable service. In no event shall Cardinal be liable for incidental or consequential damages, including, without limitation, business interruptions, loss of use, or loss of profits incurred by client, its subsidiaries, affiliates or successors arising out of or related to the performance of services hereunder by Cardinal, regardless of whether such claim is based upon any of the above-stated reasons or otherwise.

