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REPORTS

DATE:

10-25-1999

Safety & Environmental Solutions, Inc.

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ENVIRONMENTAL BUREAU
OIL CONSERVATION DIVISION

Fasken Oil & Ranch, Ltd.
Site Assessment
Felmont Collier Site

Section 9 Township 11S Range 33E
Lea County, New Mexico

October 25, 1999

Safety & Environmental Solutions, Inc.
703 E. Clinton Suite 103
Hobbs, New Mexico 88240
(505) 397-0510

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I. Background

Safety & Environmental Solutions, Inc. (SESI) was engaged in September, 1999 to perform a site assessment at the Felmont Collier Site located in Section 9, Township 11S, Range 33E, Lea County, New Mexico (Figure 1). The site consists of an old "blow-down" pit adjacent to a well and lease road. (Figure 2). An old pit area was investigated.

According to the State of New Mexico water well database, the depth to groundwater in the nearest water wells is 41' to 45' and the wells are listed as follows:

11S.33E.09.142424	19960123	41.41
11S.33E.09.44424	19810213	45.84

II. Work Performed

SESI performed sampling and field testing services for this project on several different occasions. The regulatory limits are found in **"Unlined Surface Impoundment Closure Guidelines"** *New Mexico Oil Conservation Division* - February 1993 and address Total Petroleum Hydrocarbons (TPH), Benzene, Ethyl Benzene, Toluene and Total Xylenes (BTEX). Due to the recorded depth to water in the area, the limit for TPH is 100ppm.

On September 21, 1999, Bob Allen performed two (2) field tests for TPH (EPA Method 418.1) using a General Analysis Corp. Mega TPH, Total Petroleum Hydrocarbon Analyzer Serial # 01196. Soil sampling was performed on soils from each test hole using SOPs found in **Environmental Protection Agency, 1984, Characterization of Hazardous Waste Site - A Methods Manual: Vol II.** Upon determining that there were elevated TPH levels, it was decided to bore into the pit area to delineate contamination.

On September 27, 1999, two (2) borings were done with field-testing performed for TPH. One boring was on the north side of the pit and one was at the apparent center of the pit. The bottom hole samples from both borings were taken to a third party laboratory for confirmation sampling. The delineation of vertical contamination was not achieved due to an impervious layer of rock encountered at the 8'-9' range. It was then decided to bring in an excavator to break through the rock and determine the vertical extent of contamination.

On September 29, 1999, an excavator began removing material from the pit area. The impervious rock layer encountered in the boring was found to be fractured in several spots and was removed. Four (4) samples were at various depths taken to the agreed upon bottom depth of 30'. It was decided that due to the elevated TPH levels at the bottom of the excavation, further delineation would be required using a hand auger.

On October 19, 1999, hand auger sampling was attempted on the bottom of the excavation after proper benching and sloping was achieved to safely reach the bottom of the excavated area. Removal of 1' of soil revealed highly solidified sandstone. The excavator was used to remove an additional 3' of rock. At a bottom depth of 34' a final sample was taken for field TPH testing and third party laboratory confirmation. The results are listed below.

III. Vertical and Horizontal Extent Investigation

A summary of each test hole is presented in the following tables with the field analysis in bold text and third party laboratory confirmation in italics:

Test Hole # 1

The first test hole was completed on the north side of the pit to a depth of 9'.

ID/ Depth	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	Cl
9'	**581ppm**					
9'-Lab	*1315.6 ppm*	***<0.002 ppm***	***0.003 ppm***	***0.011 ppm***	***0.097 ppm***	***65ppm***

Test Hole # 2

This test hole was completed approximately 30' south of Test Hole #1 in the apparent center of the pit to a depth of 8'.

ID/ Depth	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	Cl
8'	**1790ppm**					
8' - Lab	***1787 ppm***	***<0.002 ppm***	***<0.002 ppm***	***0.099 ppm***	***1.020 ppm***	***49ppm***

Excavation Sampling

The results are from various depths during excavation on September 29, 1999 to the agreed upon 30' depth.

ID/ Depth	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	Cl
13'	**8950ppm**					
16'	**7200ppm**					
20'	**7000ppm**					
26'	**7450ppm**					
30'	**6450ppm**					

Final Excavation

This sample was collected from the final excavation depth of 34'.

ID/ Depth	TPH	Benzene	Toluene	Ethyl Benzene	Xylenes	Cl
34'	**115ppm**					
34' - Lab	***<105.7 ppm***	***<0.002 ppm***	***<0.002 ppm***	***<0.002 ppm***	***<0.006 ppm***	***54ppm***

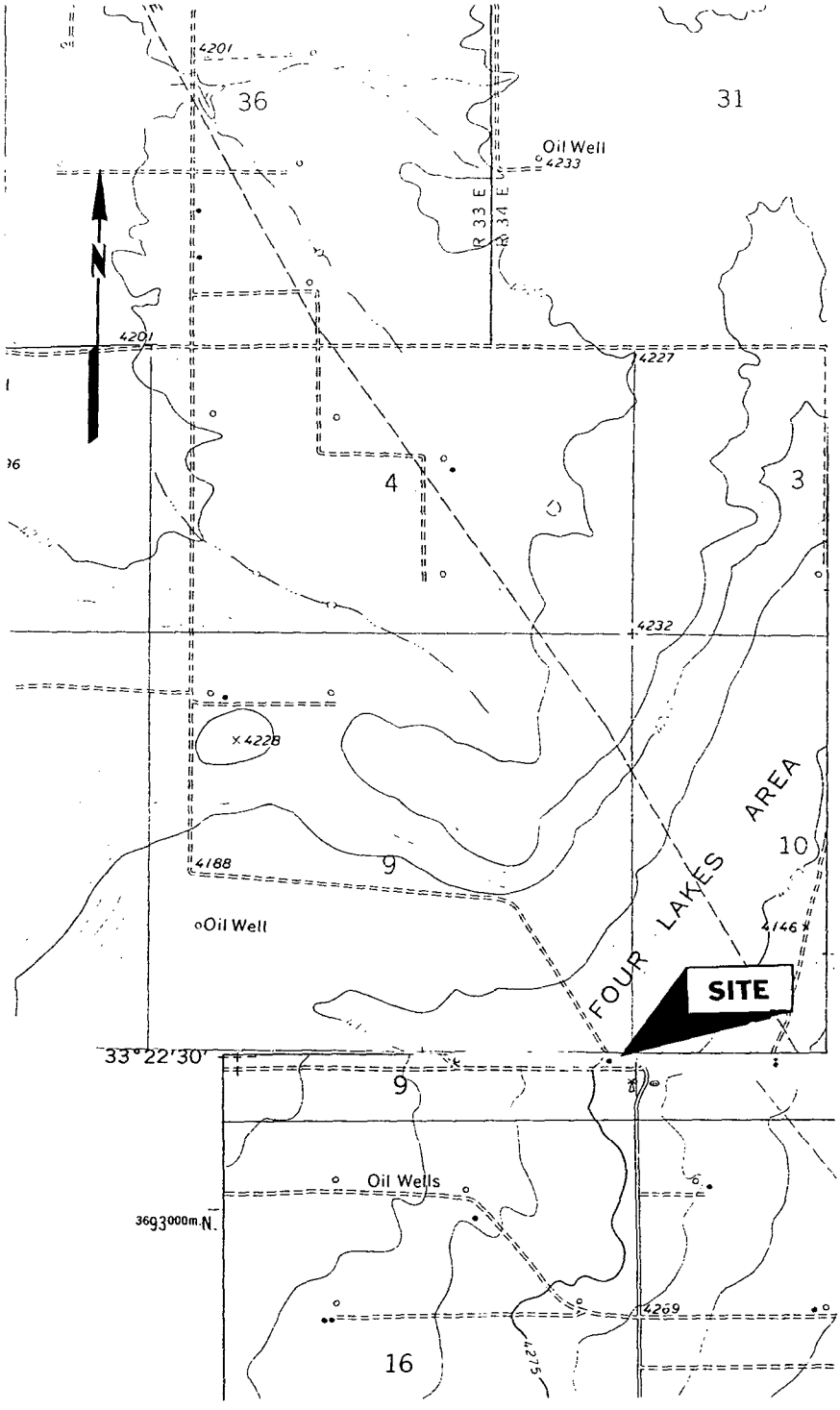
IV. Summary

This site assessment has revealed the vertical extent of contaminated soils is to a depth of 34' at the subject site. There was no indication that any contamination has migrated into the ground water in this area and no tests were conducted of the ground water.

V. Figures

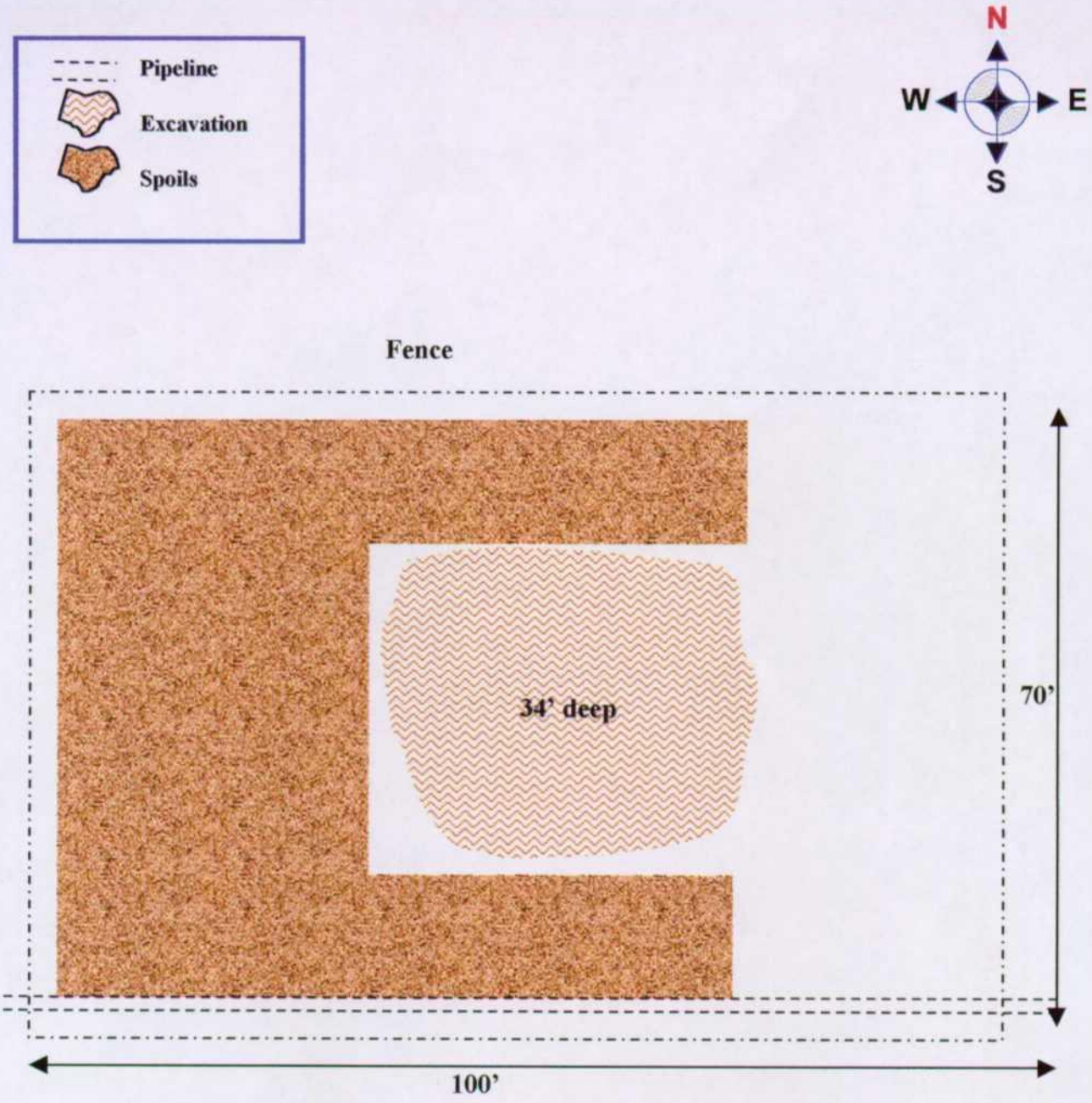
Figure 1 - Vicinity Map
Figure 2 - Site Plan
Figure 3 – Laboratory Analyticals
Figure 4 – Photo Exhibits

Figure 1
Vicinity Map



Fasken Oil and Ranch, Ltd.	**Felmont Collier Site Vicinity Map**	*Safety & Environmental Solutions, Inc. Hobbs, NM*

Figure 2
Site Plan



Fasken Oil and Ranch, Ltd.	**Site Plan**	Safety & Environmental Solutions, Inc. Hobbs, New Mexico

Figure 3
Laboratory Analyticals

CARDINAL 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: DEE WHATLEY
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/28/99
Reporting Date: 09/29/99
Project Owner: FASKIN
Project Name: NOT GIVEN
Project Location: FELMONT COLLIN #1

Analysis Date: 09/28/99
Sampling Date: 09/27/99
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JP
Analyzed By: AH

LAB NUMBER	SAMPLE ID	Cl^- (mg/Kg)
H4370-1	B.H. #1 9'	65
H4370-2	B.H. #2 8'	49
Quality Control		
True Value QC		
% Recovery		
Relative Percent Difference		

METHOD: Standard Methods	4500-ClˉB

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

Chemist

9.29.99
Date

H4370B.XLS

CARDINAL LABORATORIES

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SAFETY & ENVIRONMENTAL SOLUTIONS, INC.
ATTN: DEE WHATLEY
703 E. CLINTON, #103
HOBBS, NM 88240
FAX TO: (505) 393-4388

Receiving Date: 09/28/99
Reporting Date: 09/29/99
Project Owner: FASKIN
Project Name: NOT GIVEN
Project Location: FELMONT COLLIN #1

Sampling Date: 09/27/99
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: JP
Analyzed By: BC

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE:		09/28/99	09/28/99	09/28/99	09/28/99	09/28/99	09/28/99
H4370-1	B.H. #1 9'	75.6	1240	<0.002	0.003	0.011	0.097
H4370-2	B.H. #2 8'	247	1540	<0.002	<0.002	0.099	1.02
Quality Control		1053	914	0.093	0.091	0.091	0.278
True Value QC		1000	1000	0.100	0.100	0.100	0.300
% Recovery		105	91.4	93.1	91.4	91.1	92.7
Relative Percent Difference		6.6	4.7	6.9	4.2	4.4	4.1

METHODS: TPH(GRO & DRO) - EPA SW-846 8015 M; BTEX/MTBE-EPA SW-846 8260

Burgess J. A. Cooke. Ph. D.

9/29/99
Date

H4370.XLS

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

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page____ of____

Company Name: SESI	BILL TO PO #:
Project Manager: Doe Whatley	Company: SAME
Address: 703 E. CLINTON, #103	Attn:
City: HOBBS State: NM Zip: 88240	Address:
Phone #: (505) 397-0510	City:
Fax #: (505) 393-4388	State: Zip:
Project #: Project Owner:	Phone #:
Project Name:	Fax #:
Project Location:	

FOR LAB USE ONLY				MATRIX						PRES.			SAMPLING		ANALYSIS REQUEST															
LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	ACID:	ICE / COOL	OTHER:	DATE	TIME	BTEX	TPH	Cl, SO4													
H4370-1	B.H. #1 5'	C	1			X							4-28-99	4:10pm	X	X	X													
H4370-2	B.H. #2 5'	C	1			X							4-28-99	4:20pm	X	X	X													

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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:	Date: 4-28-99	Received By:	Phone Result ☐ Yes ☐ No Additional Fax #:
	Time: 2:15 PM		Fax Result: ☐ Yes ☐ No
Relinquished By:	Date: 4/29/99	Received By: (Lab Staff)	REMARKS:
	Time: 7:15AM	Jo Drone Potter	
Delivered By: (Circle One)		Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No	CHECKED BY: (Initials)
Sampler - UPS - Bus - Other:			

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

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

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

Receiving Date: 10/21/99
Reporting Date: 10/22/99
Project Owner: FASKEN O&R
Project Name: NOT GIVEN
Project Location: FELMONT COLLIER

Sampling Date: 10/19/99
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC/AH

LAB NUMBER	SAMPLE ID	GRO (C_6-C_{10}) (mg/Kg)	DRO (>C_{10}-C_{28}) (mg/Kg)	Cl^- (mg/Kg)
ANALYSIS DATE		10/21/99	10/21/99	10/22/99
H4409-1	BOTTOM HOLE	<10	95.7	54
Quality Control		1040	1050	955
True Value QC		1000	1000	1000
% Recovery		104	105	95.5
Relative Percent Difference		3.3	3.3	2.9

METHODS: TPH GRO & DRO: EPA SW-846 8015 M; Cl^-: Std. Methods 4500-Cl^-B

Chemist

10/22/99
Date

H4409B.XLS

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FAX TO: (505) 393-4388

Receiving Date: 10/21/99
Reporting Date: 10/22/99
Project Owner: FASKEN O&R
Project Name: NOT GIVEN
Project Location: FELMONT COLLIER

Sampling Date: 10/19/99
Sample Type: SOIL
Sample Condition: COOL & INTACT
Sample Received By: GP
Analyzed By: BC

LAB NO.	SAMPLE ID	BENZENE (mg/Kg)	TOLUENE (mg/Kg)	ETHYL BENZENE (mg/Kg)	TOTAL XYLENES (mg/Kg)
ANALYSIS DATE		10/21/99	10/21/99	10/21/99	10/21/99
H4409-1	BOTTOM HOLE	<0.002	<0.002	<0.002	<0.006
Quality Control		0.092	0.099	0.096	0.290
True Value QC		0.100	0.100	0.100	0.300
% Recovery		91.6	98.7	95.6	96.6
Relative Percent Difference		2.1	2.1	1.4	0.6

METHOD: EPA SW 846-8021B, 5030, 5021 Gas Chromatography

Chemist

10/28/99
Date

H4409A.XLS

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2111 Beechwood, Abilene, TX 79603 101 East Marland, Hobbs, NM 88240
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CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page 1 of ___

Company Name: SESI
Project Manager:
Address: 703 E. CLINTON, #103
City: HOBBS State: NM Zip: 88240
Phone #: (505) 397-0510
Fax #: (505) 393-4388
Project #: Project Owner: Fasken O&R
Project Name:
Project Location: Felmont Collier

BILL TO PO #:
Company: SAME
Attn:
Address:
City:
State: Zip:
Phone #:
Fax #:

FOR LAB USE ONLY LAB I.D.	Sample I.D.	(G)RAB OR (C)OMP.	# CONTAINERS	MATRIX: GROUNDWATER	WASTEWATER	SOIL	OIL	SLUDGE	OTHER:	PRES.: ACID:	ICE / COOL	OTHER:	SAMPLING: DATE	TIME	ANALYSIS REQUEST: TPH · 8015	BTEX	Cl
H4409-1	Bottom Hole	C	1			X					X		10-19-99	4:15 pm	X	X	X

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: Scott Caldwell Date: 10-21-99 Time: 9:00 am
Received By:

Relinquished By: Date: 10/21/99 Time: 1:15 PM
Received By: (Lab Staff) [signature]

Delivered By: (Circle One) Sampler - UPS - Bus - Other:

Sample Condition: Cool ☒ Yes ☐ No; Intact ☒ Yes ☐ No
CHECKED BY: (Initials)

Phone Result ☐ Yes ☐ No Additional Fax #:
Fax Result: ☐ Yes ☐ No
REMARKS:

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

Figure 4
Photo Exhibits

Felmont Collier - Pit Area Facing West

Felmont Collier - Pit Area Facing North

Felmont Collier - Excavated Area Facing Southeast

Felmont Collier - Excavated Area Facing Northeast

Felmont Collier - Excavated Pit Area Facing Southeast

Felmont Collier - Excavated Pit Area at Bottom