

CLOSURE REPORT



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CLOSURE REPORT

**TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITES 3, 3A, 3B, AND 3C
LEA COUNTY, NEW MEXICO**



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CLOSURE REPORT

**TEXAS - NEW MEXICO PIPE LINE COMPANY
MONUMENT SITES 3, 3A, 3B, AND 3C
LEA COUNTY, NEW MEXICO**

PREPARED FOR:

TEXAS - NEW MEXICO PIPE LINE COMPANY

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Jal, New Mexico 88252

Mr. Tony Savoie

PREPARED BY:

KEI

A handwritten signature in cursive script, reading 'Theresa Nix', written over a horizontal line.

Theresa Nix
Project Manager

A handwritten signature in cursive script, reading 'J. Michael Hawthorne', written over a horizontal line.

J. Michael Hawthorne, P.G., REM
Senior Geologist

TABLE OF CONTENTS

EXECUTIVE SUMMARY	1
PURPOSE AND SCOPE	2
BACKGROUND INFORMATION	2
CLOSURE ACTIVITIES	2
CLOSURE STANDARDS	
SOIL REMOVAL	
SOIL CHARACTERIZATION	
CONFIRMATION SAMPLING	
SOIL DISPOSAL	
BACKFILL AND RESTORATION	
QA/QC PROCEDURES	6
FIGURES	
FIG. 1 - Site Location Map	
FIG. 2 - Site Layout - Sites 3, 3A, 3B, and 3C	
FIG. 3 - Site Details - Site 3	
FIG. 4 - Site Details - Site 3A	
FIG. 5 - Site Details - Site 3B	
FIG. 6 - Site Details - Site 3C	
TABLES	
GENERAL NOTES	
TABLE I - Summary of Laboratory Results - Soil - Monument Site 3	
TABLE II - Summary of Laboratory Results - Soil - Monument Site 3A	
TABLE III - Summary of Laboratory Results - Soil - Monument Site 3B	
TABLE IV - Summary of Laboratory Results - Soil - Monument Site 3C	
APPENDICES	
APPENDIX A - Laboratory Reports	
APPENDIX B - Disposal Documentation	

EXECUTIVE SUMMARY

The Texas - New Mexico Pipe Line Company (TNMPL) alleged release sites 3, 3A, 3B, and 3C are located approximately 2.5 miles west of Monument in Lea County, New Mexico. The sites are specifically located in Section 36, Township 19 South, Range 36 East. A site location map is presented as FIG. 1. The site is owned by Mr. Jimmy Cooper. The layout of all four sites is presented on FIG. 2 and specific site details are presented on FIG. 3 through FIG. 6. This report summarizes closure activities performed at the project site from February through April of 1997.

Field activities performed included the following:

- collection of soil samples from the initial excavation to determine hydrocarbon concentration levels;
- excavation and stockpiling of additional soils which exceeded closure levels;
- collection of confirmation samples in the excavated area;
- characterization of stockpiled soils;
- transportation and off-site landfarming of stockpiled soils; and
- backfilling the excavation with clean soils.

The following conclusions are based on the field and laboratory data presented in this report:

- The closure standards at the site were determined to be as follows:

CONSTITUENT	CLOSURE CONCENTRATIONS (mg/kg)
BENZENE	10
BTEX	50
TPH	100 + Background Concentration

- Approximately 164 cubic yards of impacted soil was excavated, stockpiled, and landfarmed off-site from Monument Site 3.
- Approximately 490 cubic yards of impacted soil was excavated, stockpiled, and landfarmed off-site from Monument Site 3A.
- Approximately 906 cubic yards of impacted soil was excavated, stockpiled, and landfarmed off-site from Monument Site 3B.
- Approximately 1,295 cubic yards of impacted soil was excavated, stockpiled, and landfarmed off-site from Monument Site 3C.
- Confirmation soil samples at the sites indicated TPH, benzene, and BTEX concentrations were below closure standards.

Based on the general attainment of closure levels and the absence of significant vertical migration of hydrocarbon at each site as demonstrated by soil boring results, we recommend all four sites be closed under the New Mexico Oil Conservation Division (OCD) regulations.

PURPOSE AND SCOPE

The objective of the site closure activities was to obtain closure for the site based on OCD regulations. The following activities were performed to achieve this objective:

- determination of closure standards;
- removal of impacted soil;
- characterization of removed impacted soil;
- confirmation sampling in the excavated areas;
- transportation and off-site landfarming of impacted soil; and
- backfilling with clean soil in the excavated areas.

BACKGROUND INFORMATION

Apparent hydrocarbon impact to soils was identified at the subject site. The following response activities were subsequently performed.

- clean overburden soils including topsoil were removed and stockpiled on-site;
- impacted soils were excavated, stockpiled, and some soils were landfarmed off-site;
- one exploratory soil boring was advanced at Monument Site 3;
- one exploratory soil boring was advanced at Monument Site 3A;
- one exploratory soil boring was advanced at Monument Site 3B;
- two exploratory soil borings were advanced at Monument Site 3C; and
- soil samples were collected from native soils during soil boring advancement.

CLOSURE ACTIVITIES

CLOSURE STANDARDS

The New Mexico OCD Guidelines for Remediation of Leaks, Spills, and Releases contains the standard criteria for remediation activities. A ranking analysis for the site was performed to determine appropriate soil remediation levels. The ranking analysis is as follows:

CRITERIA	APPLICABLE STANDARD	POINTS
Depth to Ground Water	Less Than 50 Feet	20 Points
Well Head Protection	Greater Than 1000 Feet to Water Source Greater Than 200 Feet to Private Water Source	0 Points
Surface Water Body	Greater Than 1000 Feet	0 Points
Total Ranking Score		20 Points

Based on the total ranking score, the closure objectives for this site for concentrations of benzene, BTEX, and TPH are summarized below.

CONSTITUENT	CLOSURE CONCENTRATIONS (mg/kg)
BENZENE	10
BTEX	50
TPH	100 + Background Concentration

SOIL REMOVAL

Monument Site 3

Impacted soils were removed from the bottom and sidewalls of the existing excavation on February 28, 1997. These soils included sediments which had washed into the excavation. An estimated 164 cubic yards were removed from the existing excavation and stockpiled on-site for characterization prior to off-site landfarming.

Monument Site 3A

Impacted soils were removed from the bottom and sidewalls of the existing excavation from March 3 through April 7, 1997. These soils included sediments which had washed into the excavation. An estimated 490 cubic yards were removed from the existing excavation and stockpiled on-site for characterization prior to off-site landfarming.

Monument Site 3B

Impacted soils were removed from the bottom and sidewalls of the existing excavation from March 3, 1997 through March 24, 1997. These soils included sediments which had washed into the excavation. An estimated 906 cubic yards were removed from the existing excavation and stockpiled on-site for characterization prior to off-site landfarming.

Monument Site 3C

Impacted soils were removed from the bottom and sidewalls of the existing excavation from March 3, 1997 through March 5, 1997. These soils included sediments which had washed into the excavation. An estimated 1,295 cubic yards were removed from the existing excavation and stockpiled on-site for characterization prior to off-site landfarming.

SOIL CHARACTERIZATION

Monument Site 3

The soil stockpiles were characterized by collecting two composite soil samples for determination of TPH. Laboratory results indicated TPH concentrations of 409 mg/kg and 11,200 mg/kg. Laboratory reports are presented in Appendix A.

Monument Site 3A

The soil stockpiles were characterized by collecting two composite soil samples for determination of TPH. Laboratory results indicated TPH concentrations of 200 mg/kg and 3,640 mg/kg. Laboratory reports are presented in Appendix A.

Monument Site 3B

The soil stockpiles were characterized by collecting two composite soil samples for determination of TPH. Laboratory results indicated TPH concentrations of 2,872 mg/kg and 25,120 mg/kg. Laboratory reports are presented in Appendix A.

Monument Site 3C

The soil stockpiles were characterized by collecting two composite soil samples for determination of TPH. Laboratory results indicated TPH concentrations of 409 mg/kg and 44,830 mg/kg. Laboratory reports are presented in Appendix A.

CONFIRMATION SAMPLING

Monument Site 3

Composite soil samples were collected from the excavation bottom and excavation sidewall and submitted for determination of TPH concentrations. Based on the laboratory results of the sidewall soil sample, additional soils were excavated and the sidewall resampled. The sample locations are presented on FIG. 3.

Laboratory results of the final composite soil samples indicated the following:

SAMPLE LOCATION	MAX. TPH	MAX. BTEX	MAX. BENZENE
Final Soil Sidewall (mg/kg)	20.0	ND	ND
Soil Bottom (mg/kg)	79.0	ND	ND

Previous soil samples collected during the advancement of exploratory soil boring B3-1 were submitted for determination of BTEX and TPH concentrations. All soil samples indicated BTEX concentrations below laboratory detection limits. Regardless, excavation bottom and sidewall confirmation samples were also submitted for determination of BTEX concentrations.

Soil laboratory results are summarized on TABLE I and graphically presented on FIG. 3.

Monument Site 3A

Composite soil samples were collected from the excavation bottom and excavation sidewall and submitted for determination of TPH concentrations. Based on the laboratory results of the sidewall soil sample, additional soils were excavated and the sidewall and excavation bottom resampled. The sample locations are presented on FIG. 4.

Laboratory results of the final composite soil samples indicated the following:

SAMPLE LOCATION	MAX. TPH	MAX. BTEX	MAX. BENZENE
Final Soil Sidewall (mg/kg)	208*	0.135	0.135
Soil Bottom (mg/kg)	48	0.144	0.144

*Background level was 56 mg/kg. Site closure level was 156 mg/kg.

Previous soil samples collected during the advancement of exploratory soil boring B3A-1 were submitted for determination of BTEX and TPH concentrations. One soil sample indicated a detectable BTEX concentration of 0.708. Therefore, excavation bottom and sidewall samples were also submitted for determination of BTEX concentrations.

Soil laboratory results are summarized on TABLE I and graphically presented on FIG. 4.

Monument Site 3B

Composite soil samples were collected from the excavation bottom and excavation sidewall and submitted for determination of TPH concentrations. Based on the laboratory results of the sidewall soil sample, additional soils were excavated and the sidewall resampled. The sample locations are presented on FIG. 5.

Laboratory results of the final composite soil samples indicated the following:

SAMPLE LOCATION	MAX. TPH	MAX. BTEX	MAX. BENZENE
Final Soil Sidewall (mg/kg)	130*	N/A	N/A
Soil Bottom (mg/kg)	20	N/A	N/A

*Background level was 24 mg/kg. Closure level was 124 mg/kg.

Previous soil samples collected during the advancement of exploratory soil boring B3B-1 were submitted for determination of BTEX and TPH concentrations. All soil samples indicated BTEX concentrations below laboratory detection limits. Therefore, excavation bottom and sidewall samples were not submitted for determination of BTEX concentrations.

Soil laboratory results are summarized on TABLE I and graphically presented on FIG. 5.

Monument Site 3C

Composite soil samples were collected from the excavation bottom and excavation sidewall and submitted for determination of TPH concentrations. Based on the laboratory results of the sidewall soil sample, additional soils were excavated and the sidewall resampled. The sample locations are presented on FIG. 6.

Laboratory results of the final composite soil samples indicated the following:

SAMPLE LOCATION	MAX. TPH	MAX. BTEX	MAX. BENZENE
Final Soil Sidewall (mg/kg)	100	ND	ND
Soil Bottom (mg/kg)	75.5	ND	ND

Previous soil samples collected during the advancement of exploratory soil borings B3C-1 and B3C-2 were submitted for determination of BTEX and TPH concentrations. All soil samples indicated BTEX concentrations below laboratory detection limits. Regardless, excavation bottom and sidewall confirmation samples were also submitted for determination of BTEX concentrations.

Soil laboratory results are summarized on TABLE I and graphically presented on FIG. 6.

SOIL DISPOSAL

Authorization to transport and landfarm the impacted soils off-site was obtained from OCD. The impacted soils were transported to C&C Landfarm Incorporated located approximately two miles south of Monument, New Mexico. Disposal documentation is presented in APPENDIX B.

BACKFILL AND RESTORATION

Monument Site 3

Approximately 182 cubic yards of clean fill material was purchased from the landowner and placed in the excavation. The remaining non-impacted stockpiled soils from the initial release excavation activities were used to complete the backfilling operations. The area was graded and reseeded following backfilling.

Monument Site 3A

Approximately 542 cubic yards of clean fill material was purchased from the landowner and placed in the excavation. The remaining non-impacted stockpiled soils from the initial release excavation activities were used to complete the backfilling operations. The area was graded and reseeded following backfilling.

Monument Site 3B

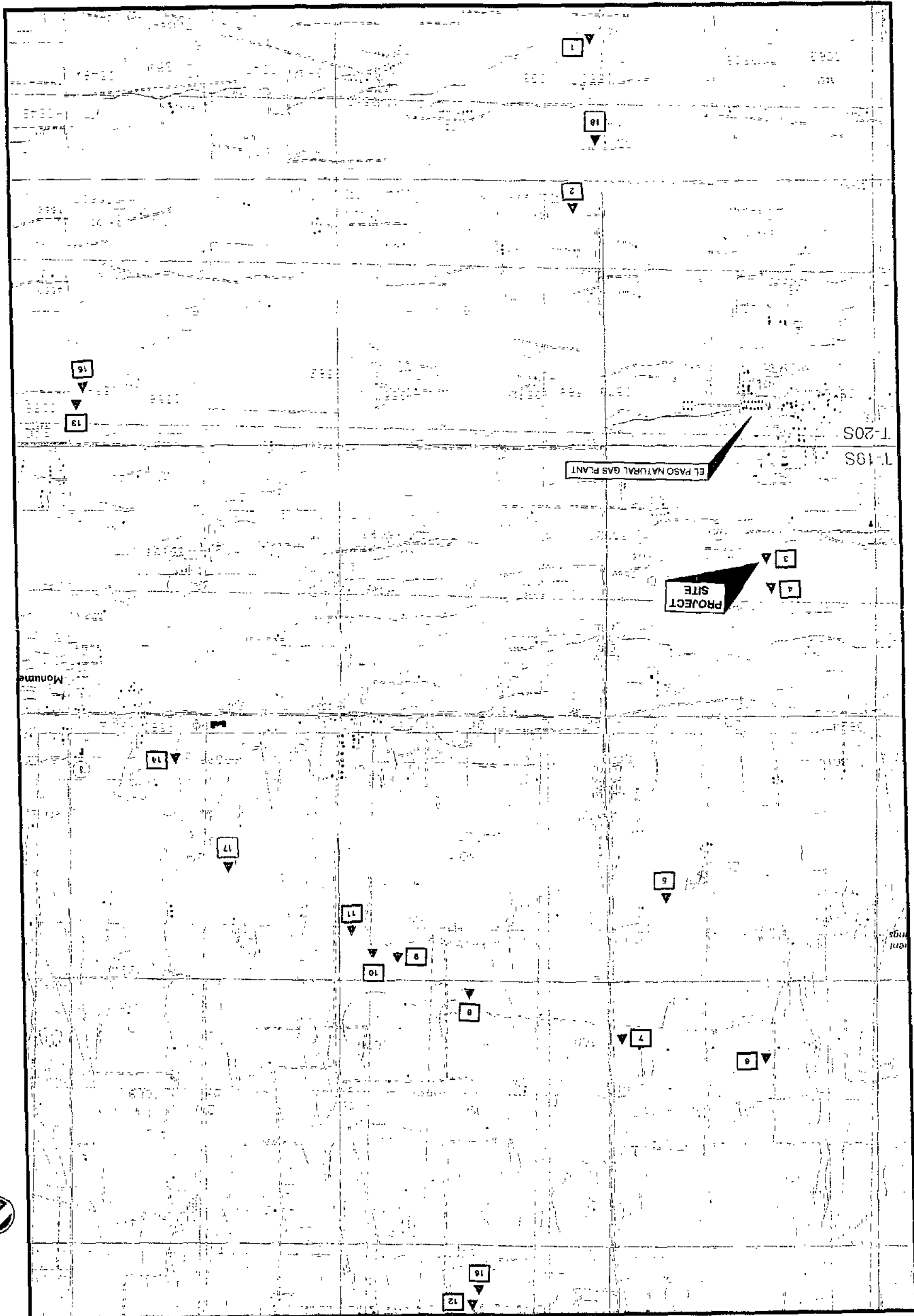
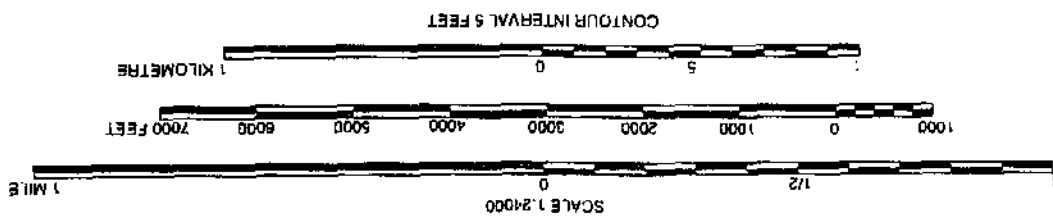
Approximately 1,004 cubic yards of clean fill material was purchased from the landowner and placed in the excavation. The remaining non-impacted stockpiled soils from the initial release excavation activities were used to complete the backfilling operations. The area was graded and reseeded following backfilling.

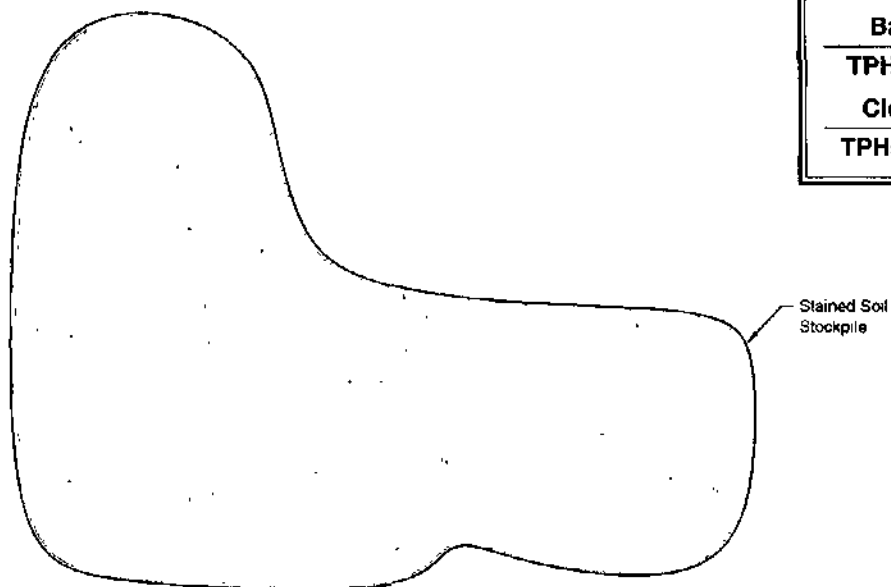
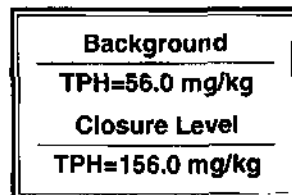
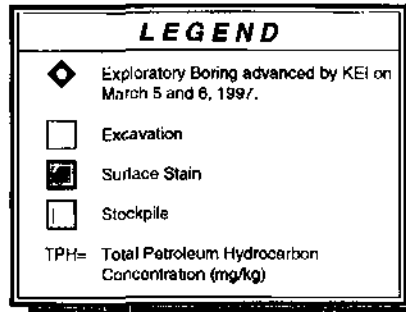
Monument Site 3C

Approximately 1,434 cubic yards of clean fill material was purchased from the landowner and placed in the excavation. The remaining non-impacted stockpiled soils from the initial release excavation activities were used to complete the backfilling operations. The area was graded and reseeded following backfilling.

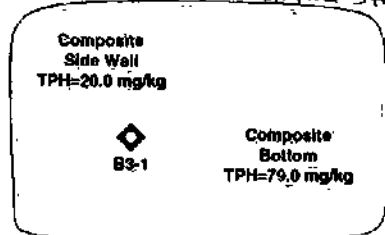
QA/QC PROCEDURES

The soil samples collected were placed in a sterile glass container equipped with a Teflon-lined lid furnished by the analytical laboratory. The container was filled to capacity with soil to limit the amount of head-space present. Each container was labeled and placed on ice in an insulated cooler. The cooler was sealed for shipment to Environmental Lab of Texas, Inc. in Odessa, Texas or XENCO Laboratories in San Antonio, Texas for determination of TPH concentrations using EPA Method 418.1. Selected soil samples from Monument Site 3A were submitted for determination of BTEX concentrations using EPA Method SW846-8020, 5030. Proper chain-of-custody documentation was maintained throughout the sampling process.





Pipeline Release Point → *Surface Stain*



Excavation

TMPL Pipeline → Cut and Capped

DIRT ROAD

SITE DETAILS

TEXAS - NEW MEXICO PIPE LINE CO.

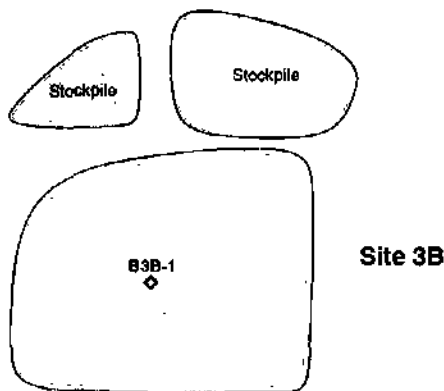
MONUMENT SITE NO. 3

LEA COUNTY, NEW MEXICO

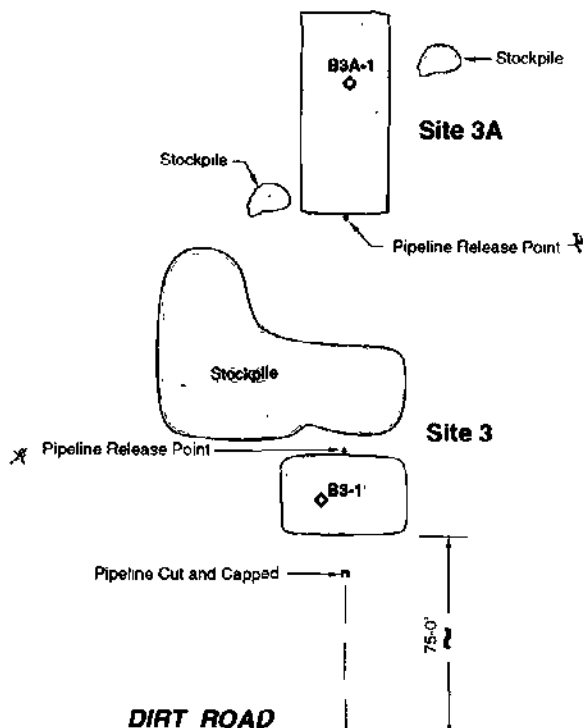
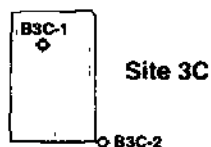
610057

FIG 3

kei



EASEMENT



LEGEND	
◆	Exploratory Boring advanced by KEI on March 5 and 6, 1997 (Site 3).
◆	Exploratory Boring advanced by KEI on April 2, 1997 (Site 3A).
◆	Exploratory Boring advanced by KEI on March 5, 1997 (Site 3C).
◆	Exploratory Boring advanced by KEI on March 6, 1997 (Site 3B).
□	Excavation
■	Surface Stain
□	Stockpile
IPH= Total Petroleum Hydrocarbon Concentration (mg/kg)	

11/20/97 PM 6:10:52Z REI

kei

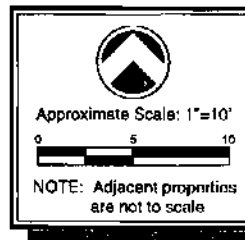
SITE LAYOUT - SITES 3, 3A, 3B AND 3C

TEXAS - NEW MEXICO PIPE LINE CO.

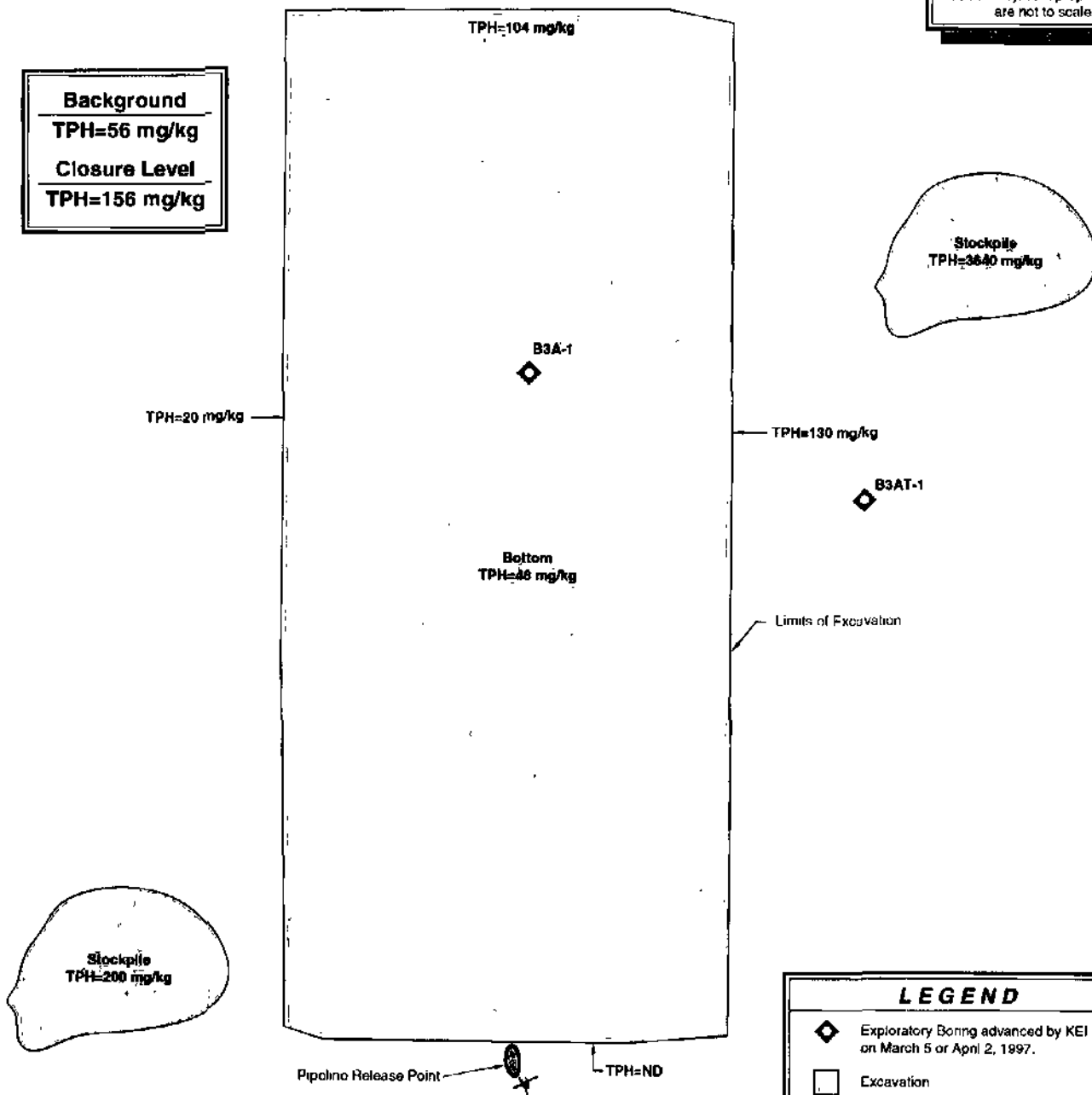
LEA COUNTY, NEW MEXICO

810057

FIG 2



Background
 TPH=56 mg/kg
Closure Level
 TPH=156 mg/kg



LEGEND

- ◆ Exploratory Boring advanced by KEI on March 5 or April 2, 1997.
- Excavation
- Surface Stain
- Stockpile

TPH= Total Petroleum Hydrocarbon Concentration (mg/kg).

ND= Not Detectable

11/20/97-RW G 161006 (P3)



SITE DETAILS

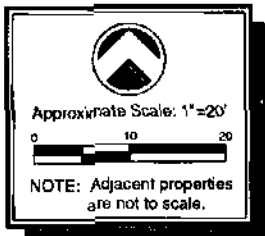
TEXAS - NEW MEXICO PIPE LINE CO.

MONUMENT SITE NO. 3A

LEA COUNTY, NEW MEXICO

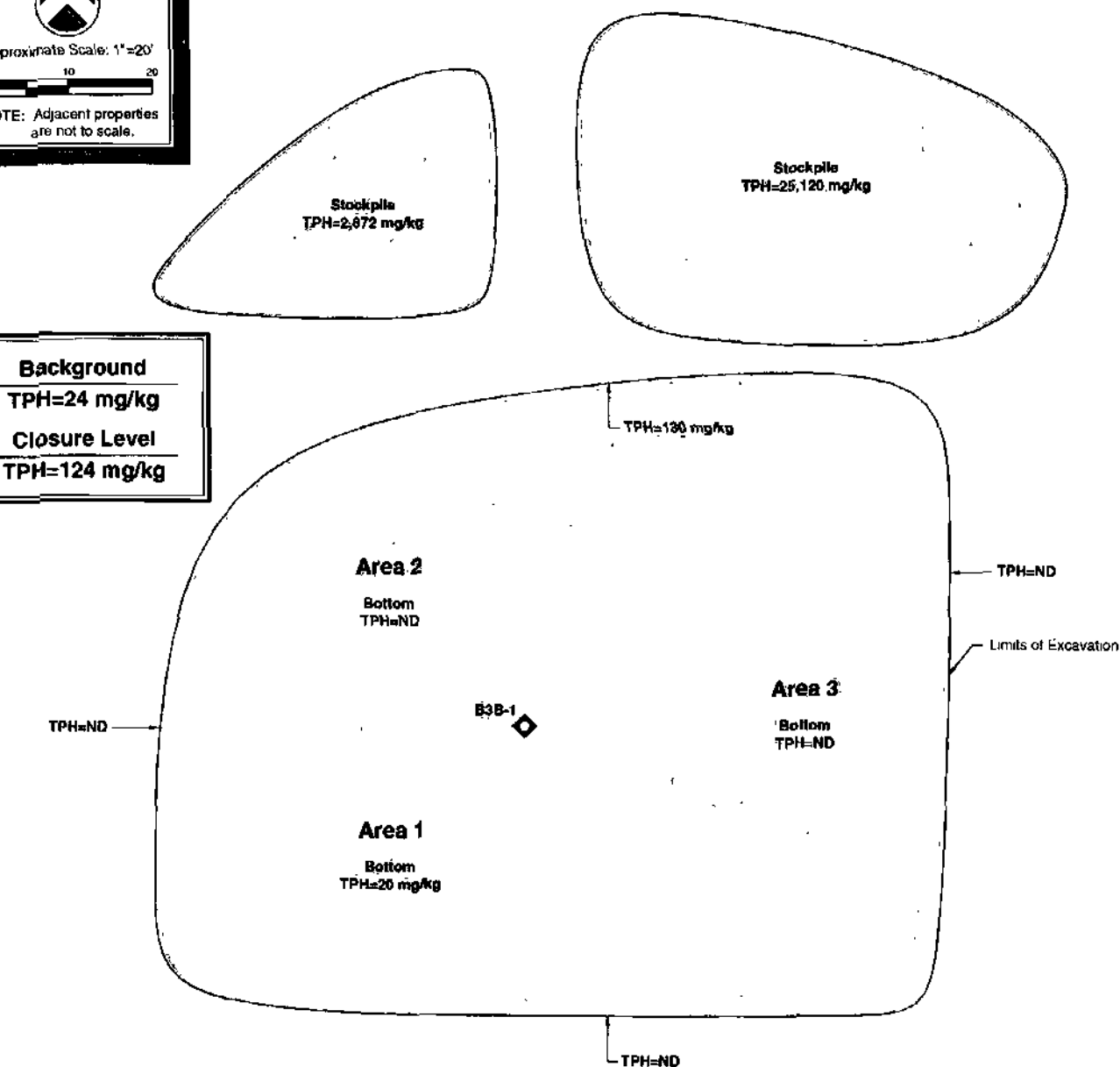
610057

FIG 4



Background
 TPH=24 mg/kg

Closure Level
 TPH=124 mg/kg



LEGEND	
	Exploratory Boring advanced by KEI on March 6, 1997.
	Excavation
	Stockpile
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)	
ND= Not Detectable	

11/20/97 RV G:\101057E4

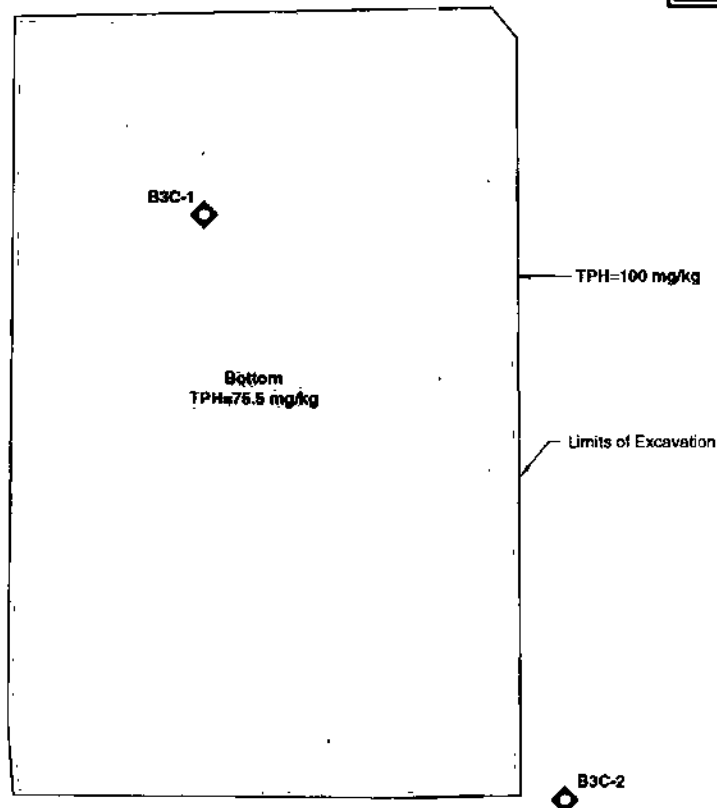


SITE DETAILS		
TEXAS - NEW MEXICO PIPE LINE CO.	MONUMENT SITE NO. 3B	LEA COUNTY, NEW MEXICO

610057
FIG 5



Closure Level
TPH=100.0 mg/kg



LEGEND	
◆	Exploratory Boring advanced by KEI on March 5, 1997.
□	Excavation
TPH= Total Petroleum Hydrocarbon Concentration (mg/kg)	

11/24/97-RN G-10057E1



SITE DETAILS		
TEXAS - NEW MEXICO PIPE LINE CO.	MONUMENT SITE NO. 3C	LEA COUNTY, NEW MEXICO

610057
FIG 6

GENERAL NOTES

- ND - Indicates constituent was not detected above the method detection limit.
--- - Indicates sample was not analyzed for specified constituent.

Method detection limits:

Soil: TPH - 10 mg/kg
 BTEX - 0.020 to 0.100 mg/kg

Laboratory test methods: BTEX - EPA Method SW846-8020, 5030
 TPH - EPA Method 418.1

TABLE I

**SUMMARY OF LABORATORY RESULTS - SOIL
MONUMENT SITE 3
LEA COUNTY, NEW MEXICO**

SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)
Boring Installation							
B3-1 at 1 - 2 feet	03/05/97	ND	ND	ND	ND	ND	48.0
B3-1 at 13 - 14 feet	03/05/97	ND	ND	ND	ND	ND	38.0
Excavation Sampling							
East Sidewall	02/24/97	ND	0.131	0.127	0.625	0.883	190
West Sidewall	02/24/97	ND	ND	ND	ND	ND	3,280
South Sidewall	02/24/97	ND	ND	ND	0.601	0.601	160
Soil Characterization Sampling							
Stockpile	02/24/97	ND	ND	ND	0.114	0.114	11,200
Stockpile(1)	03/21/97	ND	ND	ND	ND	ND	409
Background Sampling							
Background	04/18/97	---	---	---	---	---	56 ⁽²⁾
Confirmation Sampling							
Excavation Bottom	03/21/97	ND	ND	ND	ND	ND	79.0
Composite Sidewall	03/21/97	ND	ND	ND	ND	ND	20.0 ⁽³⁾

NOTES:

1. Indicates stockpile which included soils from Monument Site 3 and Site 3C.
2. The background concentration for Monument Site 3A was also utilized for Monument Site 3 due to the close proximity.
3. Indicates the retest of excavation side wall sample collected February 24, 1997, following overexcavation of additional soils.

TABLE II

**SUMMARY OF LABORATORY RESULTS - SOIL
MONUMENT SITE 3A
LEA COUNTY, NEW MEXICO**

SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)
Boring Installation							
B3A-1 at 4 - 5 feet	03/05/97	ND	ND	ND	ND	ND	49.5
B3A-1 at 6 - 7 feet	03/05/97	ND	0.135	0.082	0.489	0.706	2,830
B3A-1 at 10 - 11 feet	03/05/97	ND	ND	ND	ND	ND	31.5
Excavation Sampling							
Excavation Bottom	04/07/97	---	---	---	---	---	200
North Sidewall	04/07/97	---	---	---	---	---	250
South Sidewall	04/07/97	---	---	---	---	---	1,230
West Sidewall	04/07/97	---	---	---	---	---	4,360
East Sidewall	04/07/97	---	---	---	---	---	130
Deep Excavation Bottom	04/07/97	---	---	---	---	---	190
Soil Characterization Sampling							
East Stockpile	04/18/97	---	---	---	---	---	3,640
West Stockpile	04/18/97	---	---	---	---	---	200
Background Sampling							
Background	04/18/97	---	---	---	---	---	56
Confirmation Sampling							
Excavation Bottom	04/18/97	0.144	ND	ND	ND	0.144	48 ⁽¹⁾
Excavation North Sidewall	04/18/97	0.114	ND	ND	ND	0.114	104 ⁽¹⁾
Excavation South Sidewall	04/18/97	ND	ND	ND	ND	ND	ND ⁽¹⁾
Excavation West Sidewall	04/18/97	0.135	ND	ND	ND	0.135	208 ⁽¹⁾

NOTES:

1. Indicates the retest of excavation sample collected April 7, 1997, following overexcavation of additional soils.

TABLE III
SUMMARY OF LABORATORY RESULTS - SOIL
MONUMENT SITE 3B
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)
Boring Installation							
B3B-1 at 4 - 5 feet	03/06/97	ND	ND	ND	ND	ND	37.0
B3B-1 at 13 - 14 feet	03/06/97	ND	ND	ND	ND	ND	52.0
Excavation Sampling							
Area 1 - Excavation Bottom	04/07/97	---	---	---	---	---	20
Area 2 - Excavation Bottom	04/07/97	---	---	---	---	---	ND
Area 2 - North Sidewall	04/07/97	---	---	---	---	---	40
Area 2 - West Sidewall	04/07/97	---	---	---	---	---	160
Area 3 - Excavation Bottom	04/07/97	---	---	---	---	---	ND
Area 3 - North Sidewall	04/07/97	---	---	---	---	---	130
Area 3 - South Sidewall	04/07/97	---	---	---	---	---	550
Area 3 - West Sidewall	04/07/97	---	---	---	---	---	40
Area 3 - East Sidewall	04/07/97	---	---	---	---	---	140
Soil Characterization Sampling							
North Stockpile	04/18/97	---	---	---	---	---	2,872
South Stockpile	04/18/97	---	---	---	---	---	25,120
Background Sampling							
Background	04/18/97	---	---	---	---	---	24
Confirmation Sampling							
Area 2 - West Sidewall	04/30/97	---	---	---	---	---	ND ⁽¹⁾
Area 3 - North Sidewall	04/30/97	---	---	---	---	---	130 ⁽¹⁾
Area 3 - South Sidewall	04/30/97	---	---	---	---	---	ND ⁽¹⁾
Area 3 - East Sidewall	04/30/97	---	---	---	---	---	ND ⁽¹⁾

NOTES:

1. Indicates the retest of excavation sidewall sample collected April 7, 1997, following overexcavation of additional soils.

TABLE IV
SUMMARY OF LABORATORY RESULTS - SOIL
MONUMENT SITE 3C
LEA COUNTY, NEW MEXICO

SAMPLE LOCATION	SAMPLE DATE	BENZENE (mg/kg)	TOLUENE (mg/kg)	ETHYL-BENZENE (mg/kg)	XYLENES (mg/kg)	BTEX (mg/kg)	TPH (mg/kg)
Boring Installation							
B3C-1 at 1 - 2 feet	03/05/97	ND	ND	ND	ND	ND	36.0
B3C-1 at 13 - 14 feet	03/05/97	ND	ND	ND	ND	ND	56.0
B3C-2 at 5 - 6 feet	03/05/97	ND	ND	ND	ND	ND	30.5
B3C-2 at 13 - 14 feet	03/05/97	ND	ND	ND	ND	ND	26.5
Excavation Sampling							
East Sidewall	02/24/97	ND	0.144	0.681	1.817	2.642	23,670
West Sidewall	02/24/97	ND	ND	0.920	2.150	3.070	43,330
Excavation Bottom	03/21/97	ND	ND	ND	ND	ND	75.5
Composite Sidewall	03/21/97	ND	ND	ND	ND	ND	283
Soil Characterization Sampling							
Stockpile	02/24/97	ND	0.606	0.338	2.759	3.703	44,830
Stockpile(1)	03/21/97	ND	ND	ND	ND	ND	409
Confirmation Sampling							
East Sidewall	04/07/97	---	---	---	---	---	100 ⁽²⁾

NOTES:

1. Indicates stockpile which included soils from Monument Site 3 and Site 3C.
2. Indicates the retest of excavation side wall sample collected March 21, 1997, following overexcavation of additional soils.

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI
ATTN: MR. PAUL HARTNETT
5309 WURZBACH SUITE 100
SAN ANTONIO, TEXAS 78238
FAX: 9210-680-3763

Receiving Date: 02/25/97
Sample Type: SOIL
Project: 610057 .02.03
Project Location: MONUMENT, NM

Analysis Date: TPH 02/26/97
Analysis Date: BTEX: 02/25/97
Sampling Date: 02/24/97
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	TPH mg/kg
10281	STOCKPILE	<0.100	<0.100	<0.100	0.114	<0.100	11,200
10282	WEST SIDE	<0.100	<0.100	<0.100	<0.100	<0.100	3,280
10283	EAST SIDE	<0.100	0.131	0.127	0.395	0.23	190
10284	SOUTH SIDE	<0.100	<0.100	<0.100	0.372	0.229	160
% IA		85	83	84	96	85	99
% EA		100	94	89	100	91	102
BLANK		<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8020,5030 , EPA 418.1


Michael R. Fowler

3.17.97
Date

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

[illegible]

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

KEI
ATTN: MR. PAUL HARTNETT
5309 WURZBACH SUITE 100
SAN ANTONIO, TEXAS 78238
FAX: 9210-680-3763

Receiving Date: 02/25/97
Sample Type: SOIL
Project: 610057.02.03C
Project Location: MONUMENT, NM

Analysis Date: TPH 02/26/97
Analysis Date: BTEX: 02/25/97
Sampling Date: 02/24/97
Sample Condition: Intact/loose

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg	TPH mg/kg
10285	STOCKPILE	<0.100	0.606	0.338	1.745	1.014	44.830
10286	EAST SIDE	<0.100	0.144	0.681	1.027	0.790	23.670
10287	WEST SIDE	<0.100	<0.100	0.920	1.271	0.879	43.330

% IA	85	83	84	96	85	99
% EA	100	94	89	100	91	102
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001	<1

METHODS: SW 846-8020.5030 , EPA 418.1


Michael R. Fowler

3-17-97
Date

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone No.

FAX#: 1-505-395-3336

1000

Project:

610057.07 031

Supplier's Name:

Herold & Carrillo

MATRIX	PRESERVATIVE METHOD	SAMPLING
WATER		TIME
SOIL		DATE
AIR		OTHER
SLUDGE		NONE
		ICE
		HNO ₃
		HCL
		OTHER

X					2-24-57	1920
					2-24-57	1920
					2-24-57	1920
					2-24-57	1920

[illegible]

600	Received by:	REMA
1800	Received by: <i>Palan die jules</i>	
	Received by Laboratory:	

ATEX 8020/S030	X	
TPH 418.1	X	
TCLP Metals Ag As Ba Cd Cr Pb Hg Se		
Total Metals Ag As Ba Cd Cr Pb Hg Se		
TCLP Volatiles		
TCLP Semi Volatiles		
TDS		
RCI		

REMARKS

Q.O. 7171

ANALYTICAL REPORT 1-70560

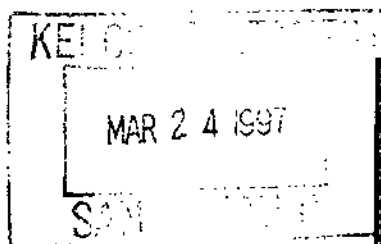
for

K.E.I. Consultants, Inc.

Project Manager: Ann Baker

Project Name: TNMPL Monument

March 12, 1997



11381 Meadowglen Lane Suite L * Houston, Texas 77082-2647
Phone (713) 589-0692 Fax (713) 589-0695



11381 Meadowglen Suite L
Houston, Texas 77082-2647
(713) 589-0692 Fax: (713) 589-0695
Houston - Dallas - San Antonio

March 12, 1997

Project Manager: Ann Baker
K.E.I. Consultants, Inc.
5309 Wurzbach Rd., Suite 100
San Antonio, TX 78238

Reference: **XENCO Report No.: 1-70560**
Project Name: TNMPL Monument
Project ID: 610057-2-3,3A,3B,3C
Project Address: Sites 3,3A,3B,3C

Dear Ann Baker:

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with XENCO Chain of Custody Number 1-70560. All results being reported to you apply only to the samples analyzed, properly identified with a Laboratory ID number. This letter documents the official transmission of the contents of the report and validates the information contained within.

All the results for the quality control samples passed thorough examination. Also, all parameters for data reduction and validation checked satisfactorily. In view of this, we are able to release the analytical data for this report within acceptance criteria for accuracy, precision, and completeness.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 3 years in our archives and after that time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in COC No. 1-70560 will be filed for 60 days, and after that time they will be properly disposed of without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

XENCO Laboratories is accredited by the American Association for Laboratory Accreditation (A2LA) for technical competence in the field of Environmental Testing (Certificate No. 0343-01). In accordance with A2LA's guidelines, XENCO operates a Quality System that meets ISO/IEC Guide 25 requirements and is strictly implemented and enforced through our standard QA/QC procedures.

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Sincerely,


Eddie Yonemoto, Ph.D.
QA/QC Manager

Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.
Certified in California, Oklahoma, Kansas, Arkansas, and approved by numerous other States and Agencies.
A Small Business and Minority Status Company that delivers SERVICE and QUALITY!

Lab. Batch #

176602A

[illegible]

Pink (Contractor), Yellow & White (Lab)

*** Pre-scheduling is recommended**

Precision Analytical Services



1381 Meadowlark Suite L Houston, Texas 77082
(713) 589-0892 Fax (713) 589-0895

CHAIN OF CUSTODY RECORD AND ANALYSIS REQUEST FORM

Page 2 of 2

Lab. Batch # 170500-SA

Contractor <u>KEL Consultants</u>		Phone (210) <u>680-3767</u>		No. coolers this shipment: Carrier: Airbill No.		Contractor COC # <u>0005</u> Quote #: P.O. No: <u>7172</u>	
Address <u>6309 Wurzbach, Ste 100, San Antonio TX 78238</u>		Project Director <u>Paul Hartnett</u>		No. of CONTAINERS Total		Turn-around - ASAP - 24 hrs 48 hrs Standard Remarks	
Project Name <u>TNMPPL Monument</u>		Project Manager <u>Ann Baker</u>		Project No. <u>610057-2-3,3A,3B,3C</u>		Please Hot	
Project Location <u>Site 3,3A,3B,3C</u>		Project No. <u>610057-2-3,3A,3B,3C</u>		Unl Dies Ker Unknown		TPH (42B) BTX (5030/8020-602)	
Sample Signature <u>Brian Siegfried</u>		Preservative		Waste Oil PT No: Sample Description		ID #	
SAMPLE CHARACTERIZATION		Container Size Type P, G		Isb Other		1	
Field ID	Date	Time	D E P T H	B I L L	W A T E R	C O M P	2
B3C-2 5-6	3/5/97	1400	5'	X			3
B3C-2 13-14	3/6/97	1450	13'	X			4
							5
							6
							7
							8
							9
							10

Relinquished by: (Signature)	DATE	TIME	Received by: (Signature)	DATE	TIME	Remarks
<u>Brian Siegfried</u>	<u>3/6/97</u>	<u>1600</u>	<u>Ann Baker</u>	<u>3/7/97</u>	<u>1005</u>	(call with highest TPH result)
<u>Ann Baker</u>	<u>3/7/97</u>	<u>1010</u>	<u>Ann Baker</u>	<u>3/7/97</u>	<u>1010</u>	

PK (Contractor), Yellow & White (Lab)

* Pre-scheduling is recommended

Precision Analytical Services

ANALYTICAL CHAIN OF CUSTODY REPORT CHRONOLOGY OF SAMPLES

K.E.I. Consultants, Inc.

Project ID: 610057-2-3,3A,3B,3C
Project Manager: Ann Baker
Project Location: Sites 3,3A,3B,3C

Project Name: TNMPL Monument

XENCO COC#: 1-70560

Date Received in Lab: Mar 7, 1997 10:10 by CB

XENCO contact : Carlos Castro/Edward Yonemoto

					Date and Time				
Field ID	Lab. ID	Method Name	Method ID	Units	Turn Around	Sample Collected	Addition Requested	Extraction	Analysis
1 B3-1(1-2')	170560-001	BTEX	SW-846	ppm	Standard	Mar 5, 1997 15:45		Mar 10, 1997 by CB	Mar 10, 1997 22:53 by CB
2		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 15:45		Mar 10, 1997 by HL	Mar 10, 1997 17:23 by HL
3 B3-1(13-14')	170560-002	BTEX	SW-846	ppm	Standard	Mar 5, 1997 16:15		Mar 10, 1997 by CB	Mar 10, 1997 23:10 by CB
4		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 16:15		Mar 10, 1997 by HL	Mar 10, 1997 17:26 by HL
5 B3A-1(4-5')	170560-003	BTEX	SW-846	ppm	Standard	Mar 5, 1997 15:10		Mar 10, 1997 by CB	Mar 10, 1997 23:28 by CB
6		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 15:10		Mar 10, 1997 by HL	Mar 10, 1997 17:29 by HL
7 B3A-1(6-7')	170560-004	BTEX	SW-846	ppm	Standard	Mar 5, 1997 15:10		Mar 11, 1997 by CB	Mar 11, 1997 11:57 by CB
8		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 15:10		Mar 10, 1997 by HL	Mar 10, 1997 17:34 by HL
9 B3A-1(10-11')	170560-006	BTEX	SW-846	ppm	Standard	Mar 5, 1997 15:25		Mar 10, 1997 by CB	Mar 10, 1997 23:45 by CB
10		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 15:25		Mar 10, 1997 by HL	Mar 10, 1997 17:37 by HL
11 B3B-1(4-5')	170560-007	BTEX	SW-846	ppm	Standard	Mar 6, 1997 08:45		Mar 10, 1997 by CB	Mar 11, 1997 09:03 by CB
12		TPH	EPA 418.1	ppm	Standard	Mar 6, 1997 08:45		Mar 10, 1997 by HL	Mar 10, 1997 17:41 by HL
13 B3B-1(13-14')	170560-008	BTEX	SW-846	ppm	Standard	Mar 6, 1997 08:55		Mar 10, 1997 by CB	Mar 11, 1997 09:20 by CB
14		TPH	EPA 418.1	ppm	Standard	Mar 6, 1997 08:55		Mar 10, 1997 by HL	Mar 10, 1997 17:44 by HL
15 B3C-1(1-2')	170560-009	BTEX	SW-846	ppm	Standard	Mar 5, 1997 10:50		Mar 10, 1997 by CB	Mar 11, 1997 09:37 by CB
16		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 10:50		Mar 10, 1997 by HL	Mar 10, 1997 17:47 by HL
17 B3C-1(13-14')	170560-010	BTEX	SW-846	ppm	Standard	Mar 5, 1997 11:15		Mar 10, 1997 by CB	Mar 11, 1997 09:55 by CB
18		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 11:15		Mar 10, 1997 by HL	Mar 10, 1997 17:50 by HL
19 B3C-2(5-6')	170560-011	BTEX	SW-846	ppm	Standard	Mar 5, 1997 14:10		Mar 10, 1997 by CB	Mar 11, 1997 01:12 by CB
20		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 14:10		Mar 10, 1997 by HL	Mar 10, 1997 17:53 by HL
21 B3C-2(13-14')	170560-012	BTEX	SW-846	ppm	Standard	Mar 5, 1997 14:50		Mar 10, 1997 by CB	Mar 10, 1997 16:00 by CB
22		TPH	EPA 418.1	ppm	Standard	Mar 5, 1997 14:50		Mar 10, 1997 by HL	Mar 10, 1997 17:56 by HL

CERTIFICATE OF ANALYSIS SUMMARY 1-70560

Project ID: 610057-2-3,3A,3B,3C
 Project Manager: Ann Baker
 Project Location: Sites 3,3A,3B,3C

K.E.I. Consultants, Inc.

Project Name: *TNMPL Monument*

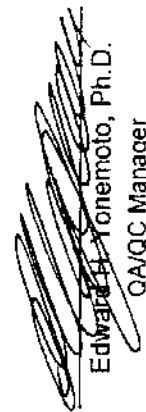
Date Received in Lab: Mar 7, 1997 10:10 by CB

Date Report Faxed: Mar 12, 1997

XENCO contact: Carlos Castro/Edward Yonemoto

Analysis Requested		Lab ID: Field ID: Depth:	170560-001 B3-1 1-2'	170560-002 B3-1 13-14'	170560-003 B3A-1 4-5'	170560-004 B3A-1 6-7'	170560-006 B3A-1 10-11'	170560-007 B3B-1 4-5'	170560-008 B3B-1 13-14'	170560-009 B3C-1 1-2'	170560-010 B3C-1 13-14'
			Date Analyzed - Analytical Results ppm (mg/L - mg/Kg)								
BTEX by EPA 8020			Mar 10, 1997	Mar 10, 1997	Mar 10, 1997	Mar 11, 1997	Mar 10, 1997	Mar 11, 1997	Mar 11, 1997	Mar 11, 1997	Mar 11, 1997
Benzene			< 0.020	< 0.020	< 0.020	< 0.050	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Toluene			< 0.020	< 0.020	< 0.020	0.135	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Ethylbenzene			< 0.020	< 0.020	< 0.020	0.082	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
m,p-Xylenes			< 0.040	< 0.040	< 0.040	0.387	< 0.040	< 0.040	< 0.040	< 0.040	< 0.040
o-Xylene			< 0.020	< 0.020	< 0.020	0.102	< 0.020	< 0.020	< 0.020	< 0.020	< 0.020
Total BTEX			< 0.120	< 0.120	< 0.120	0.706	< 0.120	< 0.120	< 0.120	< 0.120	< 0.120
Total Petroleum Hydrocarbons by EPA 418.1			Date Analyzed - Analytical Results ppm (mg/L - mg/Kg)								
Total Petroleum Hydrocarbons			Mar 10, 1997 48.0	Mar 10, 1997 38.0	Mar 10, 1997 49.5	Mar 10, 1997 2830	Mar 10, 1997 31.5	Mar 10, 1997 37.0	Mar 10, 1997 52.0	Mar 10, 1997 36.0	Mar 10, 1997 56.0

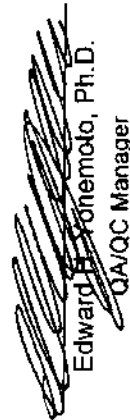
This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.


 Edward H. Yonemoto, Ph.D.
 QA/QC Manager

CERTIFICATE OF ANALYSIS SUMMARY 1-70560

Project ID: 610057-2-3,3A,3B,3C Project Manager: Ann Baker Project Location: Sites 3,3A,3B,3C		K.E.I. Consultants, Inc. Project Name: TNMPL Monument Date Received in Lab: Mar 7, 1997 10:10 by CB Date Report Faxed: Mar 12, 1997 XENCO contact: Carlos Castro/Edward Yonemoto			
Analysis Requested	Lab ID:	170560-011	170560-012	Date Analyzed - Analytical Results	ppm (mg/L - mg/Kg)
	Field ID: Depth:	B3C-2 5-6'	B3C-2 13-14'		
BTEX by EPA 8020		Mar 11, 1997	Mar 10, 1997		
Benzene		< 0.020	< 0.020		
Toluene		< 0.020	< 0.020		
Ethylbenzene		< 0.020	< 0.020		
m,p-Xylenes		< 0.040	< 0.040		
o-Xylene		< 0.020	< 0.020		
Total BTEX		< 0.120	< 0.120		
Total Petroleum Hydrocarbons by EPA 418.1		Mar 10, 1997	Mar 10, 1997		
Total Petroleum Hydrocarbons		30.5	26.5		

This report summary, and the entire report it represents, has been made for the exclusive and confidential use of K.E.I. Consultants, Inc. The interpretations and results expressed through this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories, however, assumes no responsibility and makes no warranty to the end use of the data hereby presented.


 Edward B. Yonemoto, Ph.D.
 QA/QC Manager

Certificate Of Quality Control for Batch : 17A25A73

SW- 346 5030/3020 BTEX

Date Validated: Mar 11, 1997 10:00

Date Analyzed: Mar 10, 1997 13:07

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: CB

Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY

Q.C. Sample ID 170565- 002 Parameter		[A]	[B]	[C]	[D]	[E]	Matrix	[F]	[G]	[H]	[I]	[J]
		Sample Result ppm	Matrix Spike Result ppm	Matrix Spike Duplicate Result ppm	Matrix Spike Amount ppm	Method Detection Limit ppm	Limit Relative Difference %	QC	QC	QC	Matrix Spike	Qualifier
								Spike Relative Difference %	Matrix Spike Recovery %	M.S.D. Recovery %	Recovery Range %	
Benzene		< 0.020	2.160	2.020	2.000	0.020	25.0	6.7	108.0	101.0	65-135	
Toluene		< 0.020	2.060	1.938	2.000	0.020	25.0	6.1	103.0	96.9	65-135	
Ethylbenzene		< 0.020	2.180	2.040	2.000	0.020	25.0	6.6	109.0	102.0	65-135	
m,p-Xylenes		< 0.040	4.440	4.180	4.000	0.040	25.0	6.0	111.0	104.5	65-135	
o-Xylene		< 0.020	2.180	2.040	2.000	0.020	25.0	6.6	109.0	102.0	65-135	

Spike Relative Difference [F] = $200 \cdot (B-C)/(B+C)$

Matrix Spike Recovery [G] = $100 \cdot (B-A)/[D]$

M.S.D. = Matrix Spike Duplicate

M.S.D. Recovery [H] = $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes


Edward H. Yonemoto, Ph.D.
QA/QC Manager

Certificate Of Quality Control for Batch : 17A25A74

SW- 846 5030/8020 RTX

Date Validated: Mar 11, 1997 11:00

Date Analyzed: Mar 10, 1997 22:18

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: CB

Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY										
Q.C. Sample ID 170563-001	Parameter	[A] Sample Result ppm	[B] Matrix Spike Result ppm	[C] Matrix Spike Duplicate Result ppm	[D] Matrix Spike Amount ppm	[E] Method Detection Limit ppm	Matrix Limit Relative Difference %	[F]		[J] Qualifier
								QC	M.S.D. Recovery %	
	Benzene	< 0.020	1.762	1.798	2.000	0.020	25.0	2.0	88.1	89.9
	Toluene	< 0.020	1.784	1.842	2.000	0.020	25.0	3.2	89.2	92.1
	Ethylbenzene	< 0.020	1.856	1.934	2.000	0.020	25.0	4.1	92.8	96.7
	m,p-Xylenes	< 0.040	3.740	3.940	4.000	0.040	25.0	5.2	93.5	98.5
	o-Xylene	< 0.020	1.808	1.928	2.000	0.020	25.0	6.4	90.4	96.4

Spike Relative Difference [F] = $200 \cdot (B-C)/(B+C)$

Matrix Spike Recovery [G] = $100 \cdot (B-A)/[D]$

M.S.D. = Matrix Spike Duplicate

M.S.D. Recovery [H] = $100 \cdot (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes


Edward H. Yonemoto, Ph.D.
QA/QC Manager

Certificate of Quality Control for Batch : 17A25A75

SW- 846 5030/8020 BTEX

Date Validated: Mar 11, 1997 16:30

Date Analyzed: Mar 11, 1997 09:38

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Analyst: CB

Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE AND RECOVERY														
Q.C. Sample ID 170563- 002	Parameter	[A]	[B]	[C]	[D]	[E]	Matrix	[F]	[G]	[H]	[I]	[J]		
		Sample Result ppm	Matrix Spike Result ppm	Matrix Spike Duplicate Result ppm	Matrix Spike Amount ppm	Method Detection Limit ppm	Limit	Relative Difference %	QC	Matrix Spike Recovery %	QC	Matrix Spike Recovery Range %	Qualifier	
									Spike Relative Difference %					M.S.D. Recovery %
	Benzene	< 0.020	1.866	1.784	2.000	0.020	25.0	4.5	93.3	89.2	65-135			
	Toluene	< 0.020	1.884	1.810	2.000	0.020	25.0	4.0	94.2	90.5	65-135			
	Ethylbenzene	< 0.020	1.872	1.800	2.000	0.020	25.0	3.9	93.6	90.0	65-135			
	m,p-Xylenes	< 0.040	3.840	3.680	4.000	0.040	25.0	4.3	96.0	92.0	55-135			
	o-Xylene	< 0.020	1.882	1.812	2.000	0.020	25.0	3.8	94.1	90.6	65-135			

Spike Relative Difference [F] = $200 \times (B-C)/(B+C)$

Matrix Spike Recovery [G] = $100 \times (B-A)/[D]$

M.S.D. = Matrix Spike Duplicate

M.S.D. Recovery [H] = $100 \times (C-A)/[D]$

N.D. = Below detection limit or not detected

All results are based on MDL and validated for QC purposes


Edward H. Yonemoto, Ph.D.
QA/QC Manager

**Certificate Of Quality Control for Batch : 17A30A82****EPA 418.1 Total Petroleum Hydrocarbons**

Date Validated: Mar 11, 1997 11:00

Analyst: HL

Date Analyzed: Mar 10, 1997 17:29

Matrix: Solid

QA/QC Manager: Edward H. Yonemoto, Ph.D.

MATRIX SPIKE ANALYSIS							
Q.C. Sample ID 170560- 003	[A] Sample Result	[B] Matrix Spike Result	[C] Matrix Spike Amount	[D] Method Detection Limit	[E] QC Matrix Spike Recovery	[F] LIMITS Recovery Range	[G] Qualifier
	ppm	ppm	ppm	ppm	Matrix Spike Recovery	Recovery Range	
					%	%	
Parameter							
Total Petroleum Hydrocarbons	49.50	211	198	7.50	81.7	65-135	

Matrix Spike Recovery [E] = $100 \times (B-A)/(C)$

N.C. = Not calculated, data below detection limit

N.D. = Below detection limit

All results are based on MDL and validated for QC purposes only


Edward H. Yonemoto, Ph.D.
QA/QC Manager



Certificate Of Quality Control for Batch : 17A30A82

EPA 418.1 Total Petroleum Hydrocarbons

Date Validated: Mar 11, 1997 11:00

Analyst: HL

Date Analyzed: Mar 10, 1997 17:34

Matrix: Solid

QA/QC Manager: Edward H. Yonemoto, Ph.D.

MATRIX DUPLICATE ANALYSIS						
Q.C. Sample ID 170560- 004	[A] Sample Result ppm	[B] Duplicate Result ppm	[C] Method Detection Limit ppm	[D]	[E]	[F] Qualifier
				QC Relative Difference %	LIMITS Relative Difference %	
Parameter						
Total Petroleum Hydrocarbons	2830	3170	75.0	11.3	30.0	

Relative Difference [D] = $200 \times (B-A)/(B+A)$

N.C. = Not calculated, data below detection limit

N.D. = Below detection limit

All results are based on MDL and validated for QC purposes only


Edward H. Yonemoto, Ph.D.
QA/QC Manager

**Certificate Of Quality Control for Batch : 17A30A82****EPA 413.1 Total Petroleum Hydrocarbons**

Date Validated: Mar 11, 1997 11:00

Analyst: HL

Date Analyzed: Mar 10, 1997 17:11

Matrix: Solid

QA/QC Manager: Edward H. Yonemoto, Ph.D.

Parameter	BLANK SPIKE ANALYSIS						Qualifier
	[A]	[B]	[C]	[D]	[E]	[F]	
	Blank Result	Blank Spike Result	Blank Spike Amount	Method Detection Limit	QC	LIMITS	
	ppm	ppm	ppm	ppm	Blank Spike Recovery %	Recovery Range %	
Total Petroleum Hydrocarbons	< 7.50	186	198	7.50	94.1	65-135	

Blank Spike Recovery [E] = $100 \times (B-A)/(C)$

N C = Not calculated, data below detection limit

N D = Below detection limit

All results are based on MDL and validated for QC purposes only


Edward H. Yonemoto, Ph.D.
QA/QC Manager

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TEXAS NEW MEXICO PIPE LINE COMPANY
ATTN: MR. TONY SAVOIE
P.O. BOX 1030
JAL. NM 88252
FAX: 915-395-2636

RECEIVING DATE: 04/08/97
SAMPLE TYPE: SOIL
PROJECT: TNMPL SITE #3A-3C-3B-4
PROJECT NAME: NONE GIVEN
PROJECT LOCATION: MONUMENT, NM.

ANALYSIS DATE: 04/08/97
SAMPLING DATE: 04/07/97
SAMPLE CONDITION: Intact/fced

ELT#	FIELD CODE	TPH (mg/kg)
10679	3B - AREA 3 - NORTH SIDE WALL	130
10680	3B - AREA 3 - SOUTH SIDE WALL	550
10681	3B - AREA 3 - EAST SIDE WALL	140
10682	3B - AREA 2 - BOTTOM HOLE	<10
10683	3B - AREA 2 - NORTH SIDE WALL	40
10684	3B - AREA 2 - WEST SIDE WALL	160
10685	SITE 4 - NORTH WEST SIDE WALL	4,440
10686	SITE 4 - SOUTH WEST SIDE WALL	3,260
10687	SITE 4 - BOTTOM HOLE	1,980
10688	SITE 4 - NORTH EAST SIDE WALL	860
10689	SITE 4 - SOUTH EAST SIDE WALL	1,330

QUALITY CONTROL	216
TRUE VALUE	202
% PRECISION	107

Methods: EPA 418.1


Michael R. Fowler

4-8-97
Date

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

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ATTN: MR. TONY SAVOIE
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RECEIVING DATE: 04/08/97
SAMPLE TYPE: SOIL
PROJECT: TNMPL SITE #3A-3C-3B-4
PROJECT NAME: NONE GIVEN
PROJECT LOCATION: MONUMENT, NM.

ANALYSIS DATE: 04/08/97
SAMPLING DATE: 04/07/97
SAMPLE CONDITION: Intact/Iced

ELT#	FIELD CODE	TPH (mg/kg)
10669	3A - BOTTOM HOLE	200
10670	3A - NORTH SIDE WALL	250
10671	3A - WEST SIDE WALL	4,360
10672	3A - SOUTH SIDE WALL	1,230
10673	3A - EAST SIDE WALL	130
10674	3A - DEEP BOTTOM HOLE	190
10675	3C - EAST SIDE WALL	100
10676	3B - AREA 1 - BOTTOM HOLE	20
10677	3B - AREA 3 - BOTTOM HOLE	<10
10678	3B - AREA 3 - WEST SIDE WALL	40

QUALITY CONTROL	211
TRUE VALUE	202
% PRECISION	104

Methods: EPA 418.1


Michael R. Fowler

4-8-97
Date

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 915/682-3546
FAX #: 915/682-4182

ALLSTATE SERVICES ENVIRONMENTAL. MIDLAND, TEXAS

Probed Name:

Sample Questions

Sample 36-10

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX	PRESERVATIVE METHOD	SAMPLING	
						DATE	TIME
				WATER			
				SOIL			
				AIR			
				SLUDGE			
				OTHER			
				HCL			
				HN03			
				NCR			
				NONE			
				OTHER			

10680	B-B AREA 3 South S.W.	1	1	1	4-797/16:25
10681	B-B AREA 3 East S.W.	1	1	1	4-797/16:25
10682	B-B AREA 2 Bottom H.	1	1	1	4-797/16:33
10683	B-B AREA 2 North S.W.	1	1	1	4-797/16:37
10684	B-B AREA 2 West S.W.	1	1	1	4-797/16:40
10685	SITE 4- N.W. SIDEWALK	1	1	1	4-797/16:45
10686	SITE 4- S.W. SIDEWALK	1	1	1	4-797/16:48
10687	SITE 4- Bottom Hike	1	1	1	4-797/16:52
10688	SITE 4- N.E. SIDEWALK	1	1	1	4-797/16:55
10689	SITE 4- S.E. SIDEWALK	1	1	1	4-797/17:00

Has Off

Pal. d. K. / 1000

Received by Laboratory:

Notched by:

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 915/682-3546
FAX #: 915/682-4182

ALLSTATE SERVICES ENVIRONMENTAL, MIDLAND, TEXAS

Probed Name:

Probed Name:

Sample Slashes

Sampler Signature: *Edith Hill*

- 91 -

Revised Form

[Signature]

Received by: *Debra DK/Idol*

Received by Laboratory:

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

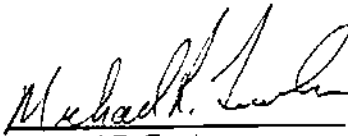
TEXAS NEW MEXICO PIPE LINE
ATTN: MR. TONY SAVOIE
P.O. BOX 1030
JAL. NEW MEXICO 88252
FAX: 505-395-2636
FAX: 915-882-4182

Receiving Date: 04/18/97
Sample Type: SOIL
Project #: SITE #4, 3B, 3A
Project Name: TEXAS NEW MEXICO
Project Location: LEA CO. NEW MEXICO

Analysis Date: 04/21/97
Sampling Date: 04/18/97
Sample Condition: Intact/Iced

ELT#	FIELD CODE	TPH mg/kg
10871	970418, SITE 4 E. SIDE WALL	24
10872	970418, SITE 4 N. SIDE WALL	152
10873	970418, SITE 4 W. SIDE WALL	88
10874	970418, SITE 4 S. SIDE WALL	160
10875	970418, SITE 4 BOTTOM HOLE	120
10876	970418, N. DIRT PILE	1,600
10877	970418, S. DIRT PILE	672
10878	970418, BACKGROUND #4	104
10879	970418, BACKGROUND 3-B	24
10880	970418, 3-B N. DIRT PILE	2,872
10881	970418, 3-B S. DIRT PILE	25,120
10882	970418, 3-A BOTTOM HOLE	48
10883	970418, 3A-W. SIDE WALL	208
10884	970418, 3A-N. SIDE WALL	104
10885	970418, 3A-S. SIDE WALL	<10
10886	970418, 3A-E. DIRT PILE	3,640
10887	970418, 3A-W. DIRT PILE	200
10888	970418, 3A- BACKGROUND	56
	BLANK	<10
	% INSTRUMENT ACCURACY	109
	% EXTRACTION ACCURACY	90

METHOD: EPA 418.1


Michael R. Fowler

4-21-97
Date

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 915/682-3546
FAX #: 915/682-4182

ALLSTATE SERVICES ENVIRONMENTAL, MIDLAND, TEXAS

Project Name:

SITE #4 + 3-B

Sample Studies

LEA CO. UMEX

LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	Volume/Amount	MATRIX							PRESERVATIVE METHOD				SAMPLING	
				WATER	SOIL	AIR	SLUDGE	OTHER	HCL	HNO3	ICE	NONE	OTHER	DATE	TIME	
10871	970418 SITE 4 E-SIDEWALL	1		✓								✓			4/18/97	0945
10872	970418 SITE 4 N-SIDEWALL	1		✓								✓			4/18/97	0945
10873	970418 SITE 4 W-SIDEWALL	1		✓								✓			4/18/97	0950
10874	970418 SITE 4 S-SIDEWALL	1		✓								✓			4/18/97	0954
10875	970418 SITE 4 Bottom Hole	1		✓								✓			4/18/97	1003
10876	970418 D-DIRT PILE	1		✓								✓			4/18/97	1010
10877	970418 S-DIRT PILE	1		✓								✓			4/18/97	1020
10878	970418 BACKGROUND #4	1		✓								✓			4/18/97	1100
10879	970418 BACKGROUND 3-B	1		✓								✓			4/18/97	1110
10880	970418 3-B N DIRT PILE			✓								✓			4/18/97	1115
10881	970418 3-B S-DIRT PILE			✓								✓			4/18/97	1115

2

Index

Resolved by

212783

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Timeline

President, Inc.

•

Three

Date Rec'd by:

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TEXAS NEW MEXICO PIPE LINE COMPANY
ATTN: MR. TONY SAVOIE
P.O. BOX 1030
JAL. NM 88252
FAX: 915-682-4182
FAX: 505-395-2636

Receiving Date: 04/18/97
Sample Type: SOIL
Project: SITE #4, 3B, 3A
Project Location: LEA CO, NEW MEXICO

Analysis Date: 04/21/97
Sampling Date: 04/18/97
Sample Condition: Intact/Iced

ELT#	FIELD CODE	BENZENE mg/kg	TOLUENE mg/kg	ETHYLBENZENE mg/kg	m,p-XYLENE mg/kg	o-XYLENE mg/kg
10871	970418, SITE 4 E. SIDE WALL	0.183	<0.100	<0.100	<0.100	<0.100
10872	970418, SITE 4 N. SIDE WALL	<0.100	<0.100	<0.100	<0.100	<0.100
10873	970418, SITE 4 W. SIDE WALL	0.205	<0.100	<0.100	<0.100	<0.100
10874	970418, SITE 4 S. SIDE WALL	0.130	<0.100	<0.100	<0.100	<0.100
10875	970418, SITE 4 BOTTOM HOLE	0.412	0.236	0.190	0.271	0.157
10882	970418, 3-A BOTTOM HOLE	0.144	<0.100	<0.100	<0.100	<0.100
10883	970418, 3A-W. SIDE WALL	0.135	<0.100	<0.100	<0.100	<0.100
10884	970418, 3A-N. SIDE WALL	0.114	<0.100	<0.100	<0.100	<0.100
10885	970418, 3A-S. SIDE WALL	<0.100	<0.100	<0.100	<0.100	<0.100

% IA	104	105	110	109	110
% EA	93	97	100	98	98
BLANK	<0.001	<0.001	<0.001	<0.001	<0.001

METHODS: SW 846-8020,5030



Michael R. Fowler

4-22-97
Date

CITIZEN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Phone #: 915/682-3546
FAX #: 915/682-4182

ALLSTATE SERVICES ENVIRONMENTAL, MIDLAND, TEXAS

Project Name:

Answers 1-10

Sampler Signature: 

MATRIX	PRESERVATIVE METHOD	SAMPLING	
		DATE	TIME
WATER			
SOIL			
AIR			
SLUDGE			
OTHER			
	HCL		
	HNO3		
	ICE		
	NONE		
	OTHER		

11

0-100000

Time

1

17

Received by Laboratory

ENVIRONMENTAL LAB OF , INC.

"Don't Treat Your Soil Like Dirt!"

TEXAS NEW MEXICO PIPE LINE COMPANY
ATTN: MR. TONY SAVOIE
P.O. BOX 1030
JAL NM 88252
FAX: 915-682-4182
FAX: 505-395-2636

RECEIVING DATE: 04/21/97
SAMPLE TYPE: SOIL
PROJECT #: SITE 3-A
PROJECT NAME: TNM 3A
PROJECT LOCATION: LEA CO. NEW MEXICO

ANALYSIS DATE: 04/22/97
SAMPLING DATE: 04/21/97
SAMPLE CONDITION: Intact/Iced

ELT#	FIELD CODE	TPH (mg/kg)
10903	970421 WSW	20

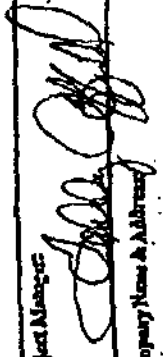

QUALITY CONTROL	278
TRUE VALUE	264
% PRECISION	105

Methods: EPA 418.1


Michael R. Fowler

4-22-97
Date

Environmental Lab of Texas, Inc. 12600 West 1-20 East Odessa, Texas 79763
(915) 563-1800 FAX (915) 563-1713

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST											
ANALYSIS REQUEST											
REMARKS											
Project Manager: 	Phone #: 915/682-3546 FAX #: 915/682-4182		Project Name: TUN 3A		Sample Signatures: 		ANALYSIS REQUEST				
Company Name & Address: ALLSTATE SERVICES ENVIRONMENTAL, MIDLAND, TEXAS			Project Location: SITE 3-A			Sample Matrix: LEA CO. NEW MEX			ANALYSIS REQUEST		
LAB # (LAB USE ONLY)	FIELD CODE	# CONTAINERS	VOLUME/AMOUNT	MATRIX	ANALYSIS METHOD	DATE	TIME	TCLP Metals Ag As Ba Cd Cr Pb Hg Se		TCLP Semi Volatiles	
10903070421	4152	1		WATER	OTHER	4/21/97	1348	TCLP Volatiles		TDS	
				SLUDGE	ICE			Total Metals Ag As Ba Cd Cr Pb Hg Se		HCL	
				SOIL	NONE						
				WATER	OTHER						
				SLUDGE	ICE						
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CERTIFICATE OF WASTE STATUS

NON-EXEMPT WASTE MATERIAL

Originating Location: TNM Sites 3, 3A, 3B, 3C + 4 Monument area, Lea County

Source: Crude Oil Pipeline SP:LL

Disposal Location: C + C Land Farm Inc. 2 miles South of Monument NM

As a condition of acceptance for disposal, I hereby certify that this waste is a non-exempt waste as defined by the Environmental Protection Agency's July 1988 Regulatory Determination.

To my knowledge, this waste will either be analyzed pursuant to the provisions of 40 CFR Part 261 to verify the nature as non-hazardous or has been verified non-hazardous due to "Knowledge of Process." I further certify that to my knowledge no "hazardous or listed wastes" pursuant to the provisions of 40 CFR Part 261, Subparts C and D, has been added or mixed with the waste so as to make the resultant mixture a "hazardous waste" pursuant to the provisions of 40 CFR, Section 261.3 (b).

I, the undersigned as the agent for the Texas-New Mexico Pipeline Co.
concur with the status of the waste from the subject site.

NAME John A. Savoie

TITLE/AGENCY Senior Tech

ADDRESS P.O. Box 1030

SIGNATURE John A. Savoie

DATE 4-23-97

OLD HUBBS
OFFICE
APR 23 1997
RECEIVED

District I - (505) 393-6161
P.O. Box 1980
Hobbs, NM 88241-1980
District II - (505) 748-1283
811 S. First
Artesia, NM 88210
District III - (505) 334-6178
1000 Rio Brazos Road
Aztec, NM 87410
District IV - (505) 827-7131

New Mexico
Energy Minerals and Natural Resources Department
Oil Conservation Division
2040 South Pacheco Street
Santa Fe, New Mexico 87505
(505) 827-7131

Form C-13.
Originated 8/8/9

Submit Origin:
Plus 1 Cop
to appropriate
District Office

REQUEST FOR APPROVAL TO ACCEPT SOLID WASTE

1. RCRA Exempt: <input type="checkbox"/> Non-Exempt: <input checked="" type="checkbox"/> <i>PFA 30 Pp. 11-1140 4/23/97</i>	4. Generator <i>Texas N.M. Pipeline Company</i>
Verbal Approval Received: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	5. Originating Site <i>Cooper Sites 3, 3A, 3B, 3C & 4</i>
2. Management Facility Destination <i>C & C Land Farm Inc.</i>	6. Transporter <i>Turner Trucking</i>
3. Address of Facility Operator <i>2 miles South of Monument NE 1/4 SW 1/4 Sect. 36 T19S. R36E</i>	8. State <i>New Mexico</i>
7. Location of Material (Street Address or ULSTR)	
9. Circle One: A. All requests for approval to accept oilfield exempt wastes will be accompanied by a certification of waste from the Generator; one certificate per job. B. All requests for approval to accept non-exempt wastes must be accompanied by necessary chemical analysis to PROVE the material is not-hazardous and the Generator's certification of origin. No waste classified hazardous by listing or testing will be approved. All transporters must certify the wastes delivered are only those consigned for transport.	

BRIEF DESCRIPTION OF MATERIAL:

Crude oil Affected Soil

Non HAZardous By Knowledge of Process N.M.D.C.D.
Approved November, 1996

OLD HOBBS
APR 23 1997
RECEIVED

Estimated Volume 3000 cy Known Volume (to be entered by the operator at the end of the haul) _____ cy
SIGNATURE: *Jimmy T. Cooper* TITLE: Pres. DATE: 4-16-97
Waste Management Facility Authorized Agent
TYPE OR PRINT NAME: Jimmy T. Cooper TELEPHONE NO. _____

(This space for State Use)

APPROVED BY: *[Signature]* TITLE: PFA 30 Pp. 1140 DATE: 4/23/97
APPROVED BY: _____ TITLE: _____ DATE: _____